Robinson+Cole

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April 26, 2022

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of an Existing Tower at 160 Witch Meadow Road, Salem, Connecticut**

Dear Attorney Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, Cellco Partnership d/b/a Verizon Wireless ("Cellco") hereby requests an order from the Siting Council ("Council") to approve the shared use of an existing telecommunications tower located on a 100.80-acre parcel at 160 Witch Meadow Road in Salem (the "Property"). The Property is owned by Ronald R. Renz. The tower is owned by SBA Properties, LLC ("SBA"). Cellco identifies this site as its "Salem North Facility". The existing 195-foot monopole tower was approved by the Town of Salem ("Town") in February of 2000. A copy of the Town's approval is included in Attachment 1.

Cellco requests that the Council find that the proposed shared use of the existing tower satisfies the criteria of C.G.S § 16-50aa and issue an order approving this request. A copy of this filing is being sent to Salem's First Selectman, Edward Chmielewski and Town Planner, Nicole Haggerty.

Background

Cellco is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. Cellco and SBA have agreed to the proposed shared use of the Witch Meadow Road tower pursuant to mutually acceptable terms and conditions. Likewise, SBA and Cellco have agreed to the proposed installation of equipment on the ground within the fenced compound area. SBA has authorized Cellco to apply for all necessary permits and approvals that may be required to share the existing tower. (*See* Attachment 2).

Cellco proposes to install nine (9) antennas and six (6) remote radio heads ("RRHs") on the tower at a centerline height of 165 feet above ground level ("AGL"). Cellco will also install two equipment cabinets and a 50-kW diesel-fueled backup generator on the ground within the existing fenced compound. Included in Attachment 3 are Cellco's project plans showing the location of Cellco's proposed site improvements. Attachment 4 contains specifications for Cellco's proposed antennas, RRHs and generator.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use." Cellco respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing tower is structurally capable of supporting Cellco's antennas, RRHs, antenna platform and related equipment. The proposed shared use of this tower is, therefore, technically feasible. A Structural Analysis Report ("SA") dated April 5, 2023 prepared by for Tower Engineering Solutions ("TES") confirms that the tower can support Cellco's proposed tower loading. A Mount Analysis ("MA") dated March 28, 2023 was also prepared for the proposed antenna and RRH mounting system. Copies of the SA and MA are included in Attachment 5.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the shared use of an existing tower, such as the existing Witch Meadow Road tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an

order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the existing tower would have minimal environmental effects, for the following reasons:

1. The proposed installation of nine (9) antennas and six (6) RRHs on an antenna platform at a height of 165 feet AGL on the existing 195-foot tower would have an insignificant incremental visual impact on the area around the Property. As mentioned above, all of Cellco's equipment will be located within the existing fenced compound. Cellco's shared use of the existing tower would, therefore, not cause any significant change or alteration in the physical or environmental characteristics of the existing facility.

2. Noise associated with Cellco's proposed facility will comply with State and local noise standards. Noise associated with the backup generator is exempt from state and local noise standards.

3. Operation of Cellco's antennas at this site would not exceed the RF emissions standards adopted by the Federal Communications Commission ("FCC"). Included in Attachment 6 of this filing is a calculated Radio Frequency Emissions Report that demonstrates that the modified facility will operate well within the FCC's safety standards.

4. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the facility other than periodic maintenance visits to the cell site.

The proposed shared use of the existing tower would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. Economic Feasibility. As previously mentioned, Cellco has entered into an agreement with SBA for the shared use of the existing tower subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Cellco's antennas, antenna mounting frame, RRHs and all related equipment. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing Witch Meadow Road tower. In fact, the provision of new and improved wireless service through Cellco's shared use of the existing tower would enhance the safety and welfare of area residents and members of the general public traveling through the Town of Salem.

A Certificate of Mailing verifying that a copy of this filing was sent to the municipal officials, the Property owner, and SBA, the tower owner is included in Attachment 7.

Conclusion

For the reasons discussed above, the proposed shared use of the existing tower at the Property satisfies the criteria stated in C.G.S. § 16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the proposed shared use.

Thank you for your consideration of this matter.

Very truly yours,

Kenneth C. Baldwin

Enclosures
Copy to:
Edward Chmielewski, First Selectman
Nicole Haggerty, Planner
Ronald R. Renz, Property Owner
SBA Properties LLC, Tower Owner
Karla Hanna

ATTACHMENT 1

SITE ID #4275-038

SITE NAME: N. Salem

CTO 1916-5

JOB COST #001916

ZONING/PERMITTING COMPLETION FORM

Zoning Classification for Site:

Special Relief (setback, height variance, special use permit, wetlands permit etc.):

Special Use Permit

* Date of Zoning Decision: 02/03/00

Summary of zoning conditions **(Include details of any conditions relative to time restrictions, expiration dates, renewal obligations, monetary obligations, performance obligation, inspection fees).**

See attached conditions.

Submitted by: Esther McNany

Title: Territory Manager

Territory Manager Approval:

* Attach a copy of the Zoning decision and forward to the Regional Compliance Manager as soon as possible, after the decision.

LEGAL NOTICE
SALEM PLANNING AND ZONING COMMISSION

At a meeting of the Salem Planning and Zoning Commission held on Thursday, February 3, 2000, the Commission took the following action:

1. Approved, with conditions, the Special Exception application of SBA/Sprint for the construction of a telecommunications tower on the east side of the access road to 160 Witch Meadow Road (Phillips property).

Lawrence Stevens, Chairman

M/S/C (Duncan/Asafaylo) to approve the Special Exception application of SBA/Sprint for the construction of a telecommunications tower on the east side of the access road to 160 Witch Meadow Road (Phillips property) with the following conditions:

1) It is stated in the Erosion & Sedimentation Control Narrative that extra silt fencing will be kept on site during construction and the anti-tracking pad will be in place prior to construction.
2) In the project summary box on drawing number T-1, the third paragraph shall be changed to state that the utilities will be <u>below</u> ground.
3) In the address box on drawing number T-1, the street name shall be corrected. It should read: "Witch Meadow Road".
4) Delete "or as otherwise shown on the contract drawings" under note #2 for access.
5) The pole shall be galvanized steel.
6) The site plan shall state that if the facility is not in use for 12 consecutive months, it shall be removed by the facility owner at his or her expense. The removal shall occur within 90 days of the end of such 12 month period.

Vote: approved unanimously.

ATTACHMENT 2

SBA Communications Corporation
134 Flanders Road
Suite 125
Westborough, MA 01581

T + 508 251 0720
F + 508 251.1755

sbasite.com

LETTER OF AUTHORIZATION

SBA ID / NAME: CT01916-S / NORTH SALEM
SITE ADDRESS: 160 Witch Meadow Road, Salem, CT 06420
LICENSEE: Cellco Partnership D/B/A Verizon Wireless

I, Christopher Stouffer, Manager for Site Development Services at SBA Communications[1], owner of the telecommunications facility identified above, do hereby authorize Cellco Partnership D/B/A Verizon Wireless, its successors and assigns, and/or its agent, (collectively "the Licensee") to act as SBA Communications' non-exclusion agent for the sole purpose of filing and consummating any land-use or building permit applications(s) as may be required by the applicable permitting authorities for Licensee's telecommunications' installation.

We understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee's installation and any such conditions of approval or modifications will be Licensee's sole responsibility.

SBA COMMUNICATIONS

BY: _____
CHRISTOPHER STOUFFER
Manager, Site Development Services

NOTARY BLOCK

STATE OF NEW JERSEY)
) ss.
COUNTY OF WARREN)

On this 17th day of March, 2023, before me, KIERSTYN FERREIRA, Notary Public in and for said county, personally appeared, CHRISTOPHER STOUFFER, known to me (or who has satisfactorily identified himself) as the signer to the above-referenced document.

_____
Notary Public State of New Jersey
My Commission Expires: May 13, 2024

Kierstyn Ferreira
NOTARY PUBLIC
STATE OF NEW JERSEY
ID # 50104944
MY COMMISSION EXPIRES May 13, 2024

[1] SBA Communications includes all of the "SBA Tower Entities"

ATTACHMENT 3

verizon

20 ALEXANDER DRIVE, 2nd FLOOR
WALLINGFORD, CT 06492

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420
NEW LONDON COUNTY

PROJECT TYPE: WIRELESS TELECOMMUNICATIONS
COLLOCATION ON EXISTING 195'± MONOPOLE

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN DATE: 03/17/23

ANTENNA MOUNT STRUCTURAL ANALYSIS DATE: 03/28/23 (BY TOWER ENGINEERING SOLUTIONS)

ANTENNA SUPPORT STRUCTURE (195'± MONOPOLE) STRUCTURAL ANALYSIS DATE: 04/05/23 (BY TOWER ENGINEERING SOLUTIONS)

SITE INFORMATION

VERIZON LOCATION CODE:	765831
VERIZON SITE NAME:	SALEM NORTH CT
SBA SITE NUMBER:	CT01916-S
SBA SITE NAME:	NORTH SALEM
MDG LOCATION ID:	5000916739
SITE ADDRESS:	160 WITCH MEADOW ROAD SALEM, CT 06420
PROPERTY OWNER:	RONALD R. RENZ 44 MUSTANG DRIVE MONROE, CT 06468
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY	NEW LONDON COUNTY, CT
ZONING DISTRICT:	(I) INDUSTRIAL
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	195'± AGL
GROUND ELEVATION:	348'± AMSL
SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE N 41°-30'-10.19" (41.502830°) (NAD '83) W 72°-17'-49.56" (-72.297100°) (NAD '83)
ARCHITECT/ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752

GENERAL NOTES

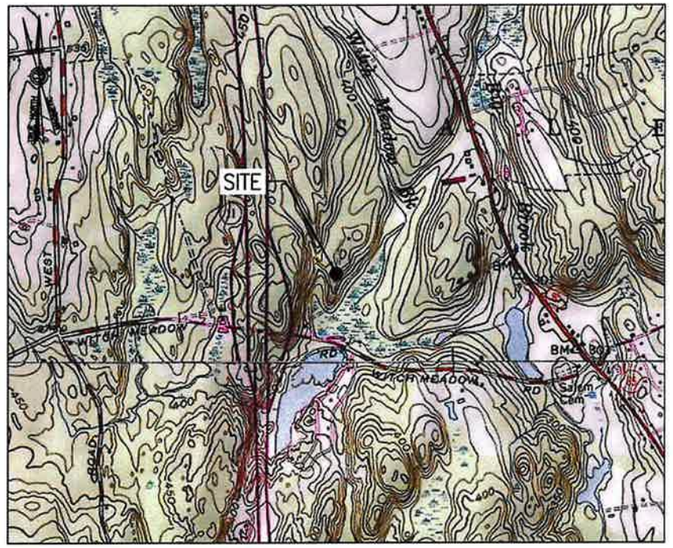
1. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.

2. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2022 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

VICINITY MAP

SCALE: 1"=1000'



DRIVING DIRECTIONS

FROM WALLINGFORD, TAKE I-91 NORTH TOWARD HARTFORD. TAKE EXIT 25-26 FOR CT-3 NORTH/GLASTONBURY/OLD WETHERSFIELD. BEAR LEFT TO TAKE EXIT 25 ONTO CT-3 NORTH TOWARD GLASTONBURY. TAKE EXIT ONTO CT-2 EAST TOWARD NORWICH. KEEP RIGHT AT FORK TO TAKE EXIT 19 FOR CT-11 SOUTH TOWARD NEW LONDON. FOLLOW SIGNS FOR NEW LONDON. TAKE EXIT 5 FOR WITCH MEADOW ROAD. TURN LEFT ONTO WITCH MEADOW ROAD. SITE IS LOCATED ON THE LEFT HAND SIDE.

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DO NOT SCALE DRAWINGS

ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS AT THE PROPOSED PROJECT SITE SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION PHASE. THE PROJECT OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO PROCEEDING WITH THE PROPOSED WORK AFFECTED BY SUCH DISCREPANCIES. IN THE EVENT OF LACK OF SUCH NOTIFICATION, SUCH DISCREPANCIES SHALL BECOME THE RESPONSIBILITY OF THE PREVAILING CONTRACTOR RESPONSIBLE FOR CONSTRUCTION.

PROJECT DESCRIPTION

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT INSTALLATION AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS TELECOMMUNICATIONS SERVICE.
2. THIS FACILITY DOES NOT, NOR WILL IT CONSUME UNRECOVERABLE ENERGY.
3. NO PORTABLE WATER SUPPLY IS OR WILL BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER IS OR WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE IS OR WILL BE GENERATED AT THIS LOCATION.

SCOPE OF WORK

INSTALL:

- 1 LOW-PROFILE PLATFORM
- 3 SIDE-BY-SIDE ANTENNA MOUNT KITS
- 9 ANTENNAS
- 6 RADIOS
- 1 JUNCTION BOX
- 2 HYBRID CABLES & ASSOCIATED JUMPERS
- 1 CABLE ICE BRIDGE
- 1 GPS ANTENNA & ASSOCIATED CABLE
- 1 12'x22' CONCRETE PAD
- 1 EQUIPMENT CABINET
- 1 BATTERY CABINET
- 1 11'-10"x12'-6" ICE CANOPY
- 1 50kW DIESEL GENERATOR
- 1 HOFFMAN BOX
- 1 POWER TRANSFER LOAD CENTER

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492
(203) 741-7338

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/24/2023

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/28/23	CONSTRUCTION REVISED	CMC
2	03/13/23	CONSTRUCTION REVISED	CMC
1	01/19/23	ISSUED FOR CONSTRUCTION	CMC
0	01/09/23	ISSUED FOR REVIEW	CMC

PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 765831

MDG LOCATION ID: 5000916739

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T01

22136.001

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – VERIZON WIRELESS
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – VERIZON WIRELESS
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC. 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACK FILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH VERIZON WIRELESS NETWORK STANDARD #NSTD123 TO THE MAXIMUM EXTENT FEASIBLE UNLESS PRECLUDED OR LIMITED BY DESIGN SHOWN ON THESE DRAWINGS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER
   OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....¾ IN.
   BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON WIRELESS SPECIFICATION 25252-000-3PS-GET-00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅜" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANEL BOARD AND CIRCUIT ID'S).

8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #3 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON- CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25987
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/30/23

CHECKED BY:	JMT
APPROVED BY:	JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/30/23	CONSTRUCTION REVISED	CMC
2	03/13/23	CONSTRUCTION REVISED	CMC
1	01/19/23	ISSUED FOR CONSTRUCTION	CMC
0	01/09/23	ISSUED FOR REVIEW	CMC

PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE:	769631
MDG LOCATION ID:	5000816739

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN01

221.38.001

SITE PLAN
SCALE: 1" = 40'-0"
1
A01
0 40' 80' 120'

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
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PROFESSIONAL CIVIL ENGINEER
3/30/2023

CHECKED BY:	JMT
APPROVED BY:	JMT

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160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE:	769531
MDG LOCATION ID:	5000916739

SHEET TITLE

SITE PLAN

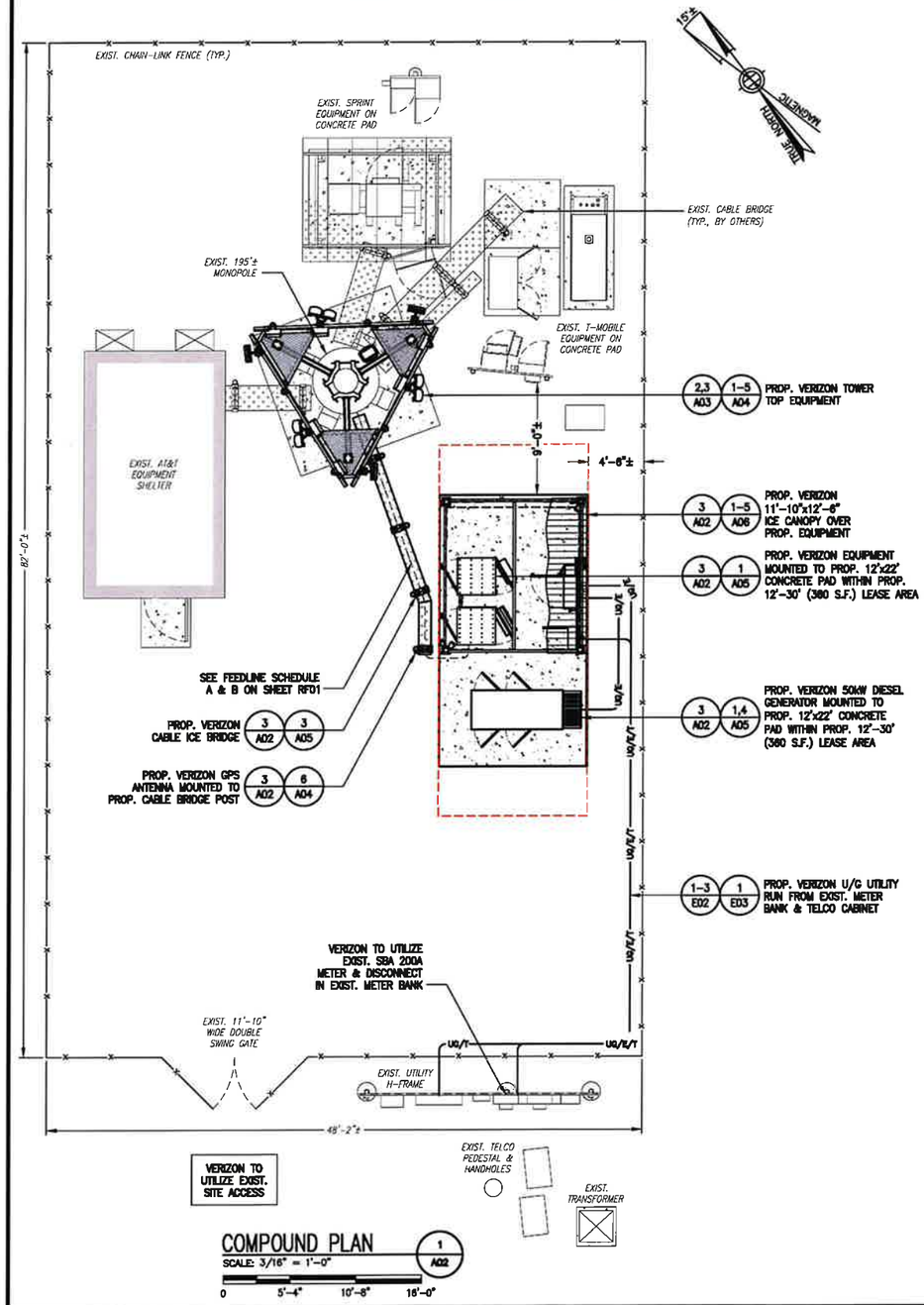
SHEET NUMBER

A01

22136.001

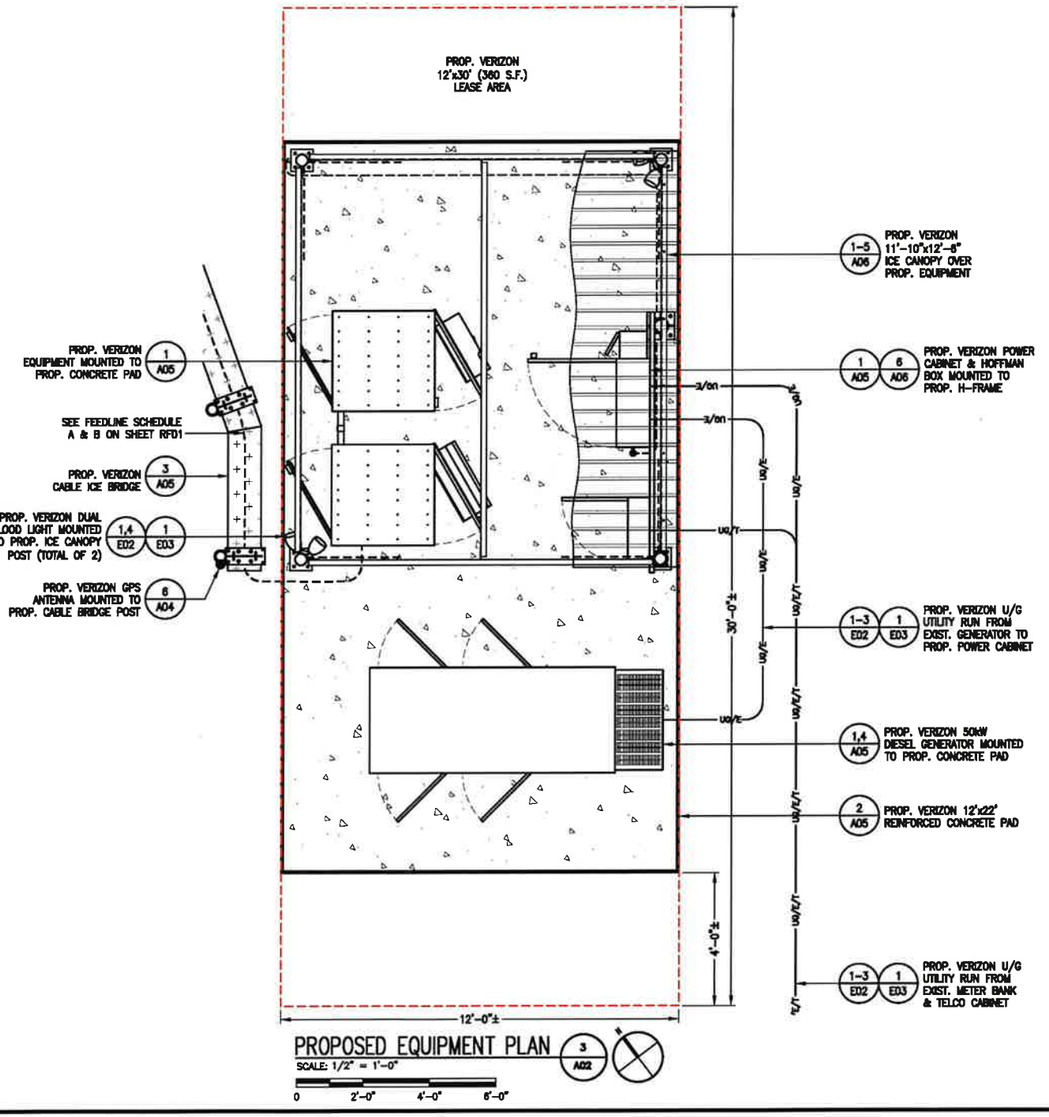
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

SPECIAL CONSTRUCTION WORK NOTE (HAND DUG UTILITY TRENCH EXCAVATION REQUIRED):
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH SUFFICIENT TEST HOLES OR AS DIRECTED/REQUIRED BY SBA REGIONAL SITE MANAGER SHALL HAND-EXCAVATE ALL PROPOSED UNDERGROUND UTILITY TRENCHES. GENERAL CONTRACTOR RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF EXISTING UNDERGROUND UTILITIES, PHYSICAL DAMAGE REPAIR, AND SERVICE RESTORATION.



COMPOUND PLAN 1 A02
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

PROPOSED EQUIPMENT LOCATION PHOTO 2 A02
SCALE: N.T.S.



PROPOSED EQUIPMENT PLAN 3 A02
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 6'-0"

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PROJECT NAME & ADDRESS
SALEM NORTH CT
160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE:	769831
MDG LOCATION ID:	8000916739

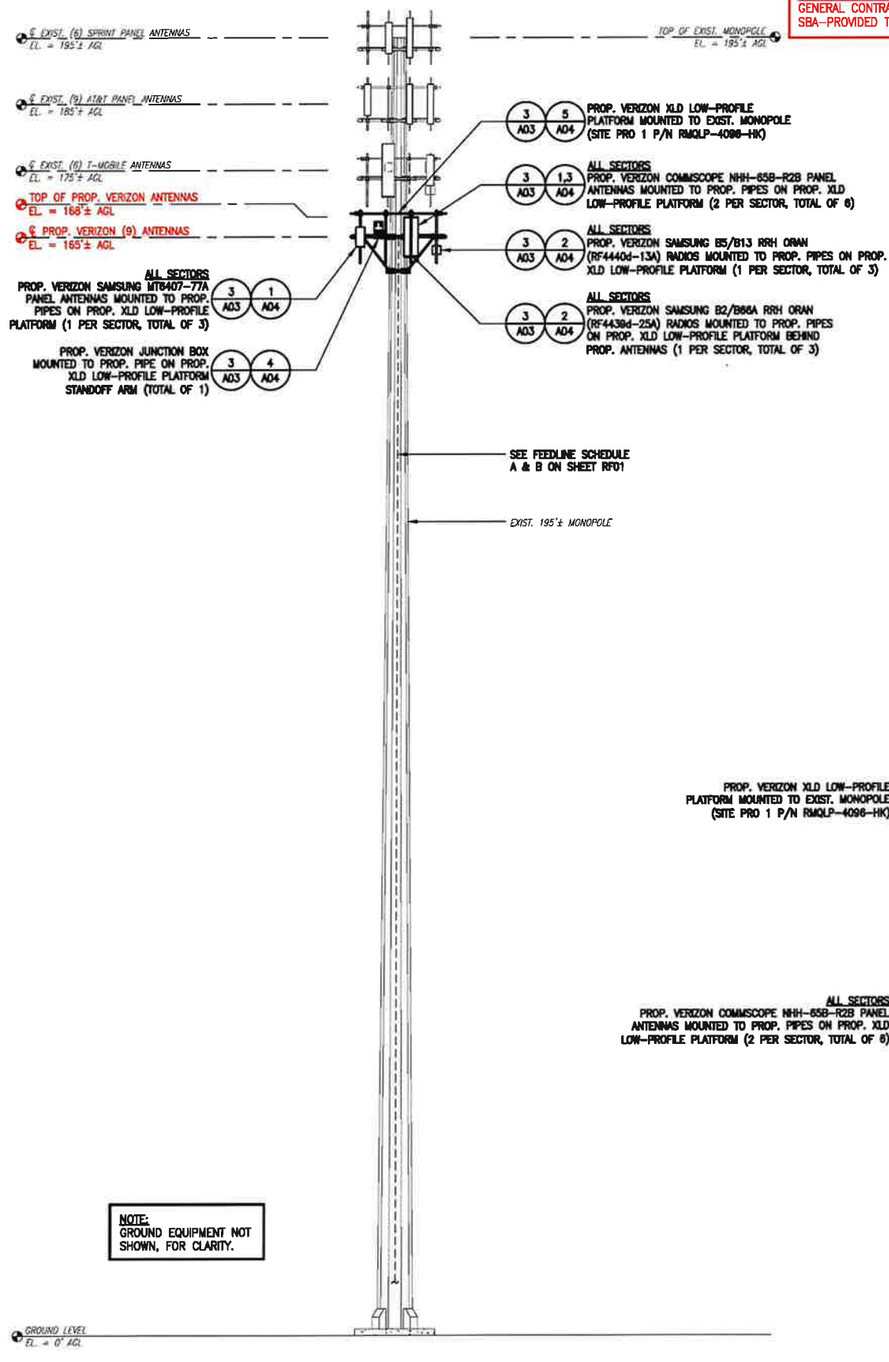
SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A02

22138.001

EXISTING TOWER PHOTO (1 / A03)
SCALE: N.T.S.

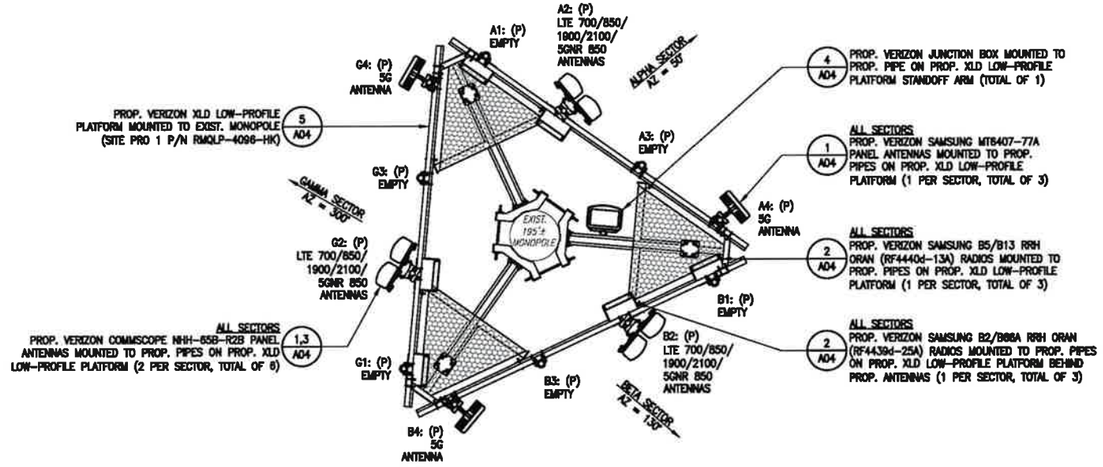
NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.



TOWER ELEVATION (2 / A03)
SCALE: 1" =10'-0"
0 10' 20' 30'

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

RAD CENTER NOTE:
VERIZON ANTENNA AND MOUNT RAD CENTER SHOWN IN ELEVATION ARE ACCORDING TO STRUCTURAL ANALYSIS DONE BY OTHERS AND MAY DIFFER FROM RAD CENTER ON RFDS PROVIDED BY VERIZON.



PROPOSED ANTENNA PLAN (3 / A03)
SCALE: N.T.S.

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

(E) – EXISTING
(P) – INSTALL
(F) – FUTURE

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3/20/2023

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APPROVED BY: JMT

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PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 7656531
MDG LOCATION ID: 8000916730

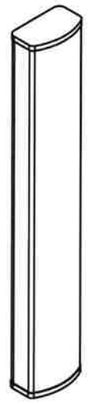
SHEET TITLE

TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER

A03

22136.001



COMMSCOPE NHH-65B-R2B ANTENNA

DIMENSIONS: 72.0"H x 11.9"W x 7.1"D
WEIGHT: 43.7 lbs
QUANTITY: 2 PER SECTOR, TOTAL OF 6
SECTORS: ALPHA, BETA, GAMMA

SAMSUNG MT6407-77A ANTENNA

DIMENSIONS: 35.2"H x 16.1"W x 5.6"D
WEIGHT: 87.1 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3
SECTORS: ALPHA, BETA, GAMMA

ANTENNA DETAILS
SCALE: N.T.S.
1 / A04

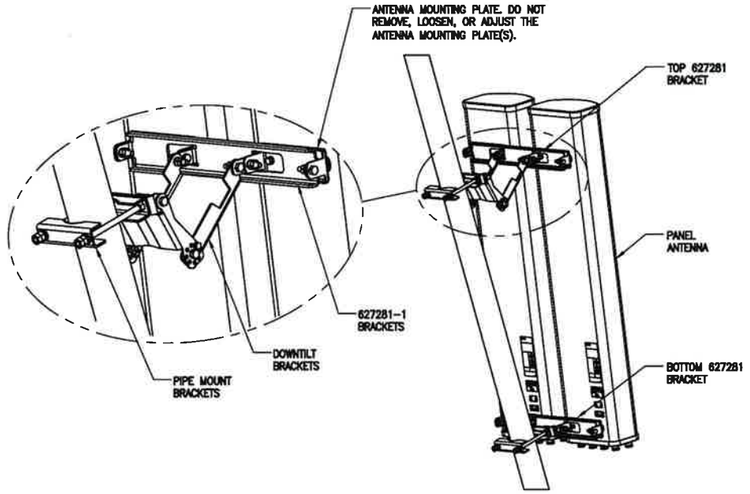
SAMSUNG RF4440d-13A B5/B13 RADIO

DIMENSIONS: 15.0"H x 15.0"W x 9.0"D
WEIGHT: 70.3 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3
SECTORS: ALPHA, BETA, GAMMA

SAMSUNG RF4439d-25A B2/B66A RADIO

DIMENSIONS: 15.0"H x 15.0"W x 10.0"D
WEIGHT: 74.7 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3
SECTORS: ALPHA, BETA, GAMMA

RADIO DETAIL
SCALE: N.T.S.
2 / A04



COMMSCOPE BSAMNT-SBS-1-2
SIDE-BY-SIDE ANTENNA MOUNT BRACKET

WEIGHT: 25.4 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3
SECTORS: ALPHA, BETA, GAMMA
NOTE: MOUNT ANTENNA PER MANUFACTURER'S SPECIFICATIONS

TYPICAL SIDE-BY-SIDE ANTENNA MOUNT KIT
SCALE: N.T.S.
3 / A04

Procedure
Mounting Procedures

4.1 A mounting base is delivered with the unit. The base allows either wall/ladder or pole mounted installation. See picture to identify the holes for each installation method.

4.2 ***Option 1: Pole Mount***
Using supplied hardware, mount Bracket to 2" to 4" diameter pole.

4.3 ***Option 2: Unistrut***

4.4 ***Option 3: Monopole***
Use 1" stainless steel bands (not supplied) through slots on bracket to mount to Monopole.

Gland/Insert Definitions

5.1 See picture to identify Base Gland Assembly Definitions.

Assembled in unit as shipped:

Qty	Connector Size	Pos	Insert P/N	Insert Hole	Cable Type
2	M75	A	190-0760	42mm	6x12 RL
4	M75	B	190-0738	3x 16.5mm	1x2

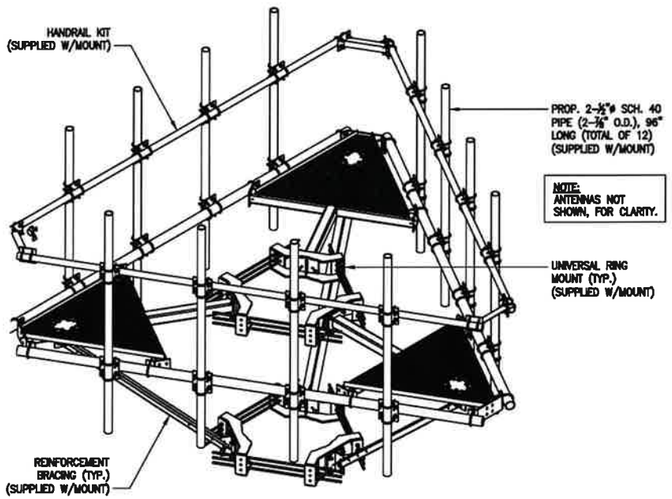
Included in kit shipped with unit:

Qty	Connector Size	Insert P/N	Insert Hole	Cable Type	Purpose	Pos
2	M75	190-0760	42mm	6x12 RL	2 glands fit 1 each 6/12 Hyb	B
2	M75	190 0747	2x 24.5mm	2x12 DC	2 glands fit 2 each #6 12 cond DC	B
1	M75	190-0905	2x 10.5mm	2x12 Fiber	1 gland fit 2 x 12 fiber trunk	B
1	M75	190 0012	2x 9.5mm	2 ETH	1 gland fits 2 ethernet cable	B

FIBER JUNCTION BOX

DIMENSIONS: 29.56"H x 16.5"W x 12.6"D
WEIGHT: 32.0 lbs
QUANTITY: TOTAL OF 1

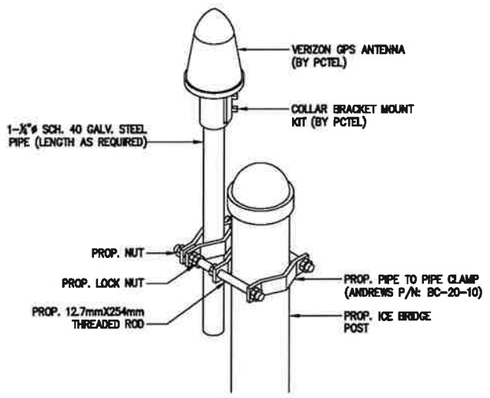
TYPICAL FIBER JUNCTION BOX DETAILS
SCALE: N.T.S.
4 / A04



SITE-PRO 1 14'-6" LOW-PROFILE
CO-LOCATION PLATFORM W/HANDRAIL KIT

PART NUMBER: RMQLP-4096-HK
QUANTITY: TOTAL OF 1

ANTENNA MOUNT DETAIL
SCALE: N.T.S.
5 / A04



NOTE:
THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1¼" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

GPS ANTENNA MOUNTING DETAIL
SCALE: N.T.S.
6 / A04

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PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE:	788831
MDG LOCATION ID:	8000816739

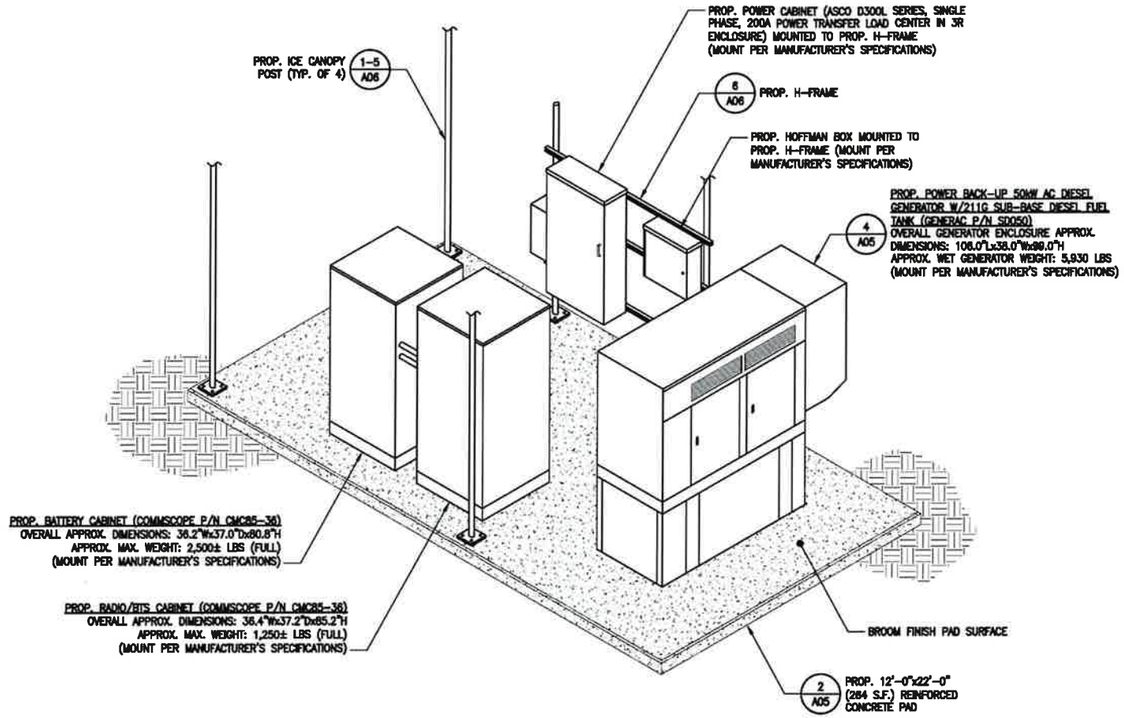
SHEET TITLE

ANTENNA DETAILS

SHEET NUMBER

A04

221136.001



EQUIPMENT AREA ISOMETRIC VIEW 1 A05

SCALE: N.T.S.

CONCRETE GENERAL NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE ¾ INCH. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
3. PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT IN ALL EXPOSED CONCRETE WORK WITH AIR-ENTRAINING ADMIXTURE COMPLYING WITH ASTM C 260. AT TROWEL-FINISHED FLOORS, DO NOT EXCEED AIR-ENTRAINMENT CONTENT OF 3 PERCENT.
4. NO HOLES OR SLEEVES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
5. ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
6. FLOOR SLAB TOLERANCES TO ASTM E1155; SPECIFIED OVERALL MINIMUM VALUE OF FLATNESS F F=25 WITH LOCAL MINIMUM F F=17, AND MINIMUM VALUE OF LEVELNESS F F=20 WITH LOCAL MINIMUM F I AND F F WITHIN 72 HOURS OF SLAB CONSTRUCTION.
7. CABINETS ON SLAB (IF APPLICABLE). ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 4000 PSI.

FOUNDATION NOTES:

1. DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.1 CODES

A. DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE 2012.

B. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-08.

2. EARTHWORK

2.1 FOUNDATIONS

A. FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 2000 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.

B. DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.

C. THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

3. CONCRETE

3.1 FORMWORK

A. CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," (ACI 301-08).

B. FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

3.2 REINFORCEMENT

A. REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.

B. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

FOOTINGS & SLABS CAST AGAINST GROUND	3"
CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER AT BARS GREATER THAN #6	2"
AT BARS #6 OR LESS	1-1/2"
CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER BEAMS, GIRDERS & COLUMNS	1-1/2"
SLABS & WALLS	3/4"

3.3 CAST-IN-PLACE-CONCRETE

A. MINIMUM 28 DAY CYLINDER STRENGHT AND MAXIMUM SLUMP, PRIOR TO ADDITION OF SUPER PLASTICIZERS, AS FOLLOWS:

	F'C (PSI)	SLUMP
CLASS I FOOTINGS	4000	3"
CLASS II FOOTINGS	4000	3"
CLASS III INTERIOR ELEVATED SLABS & WALLS	4000	4"
CLASS V OTHER WORK	4000	4"
CLASS VI LEAN CONCRETE FOR OVER EXCAVATION OF FOUNDATIONS	2000	N/A

B. MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.

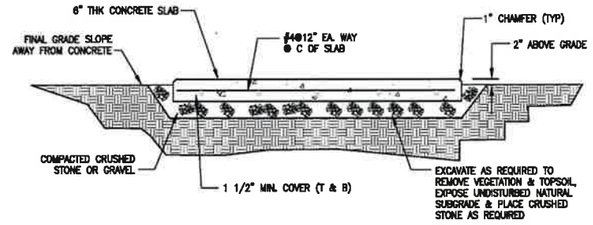
C. COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".

D. COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1.

E. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.

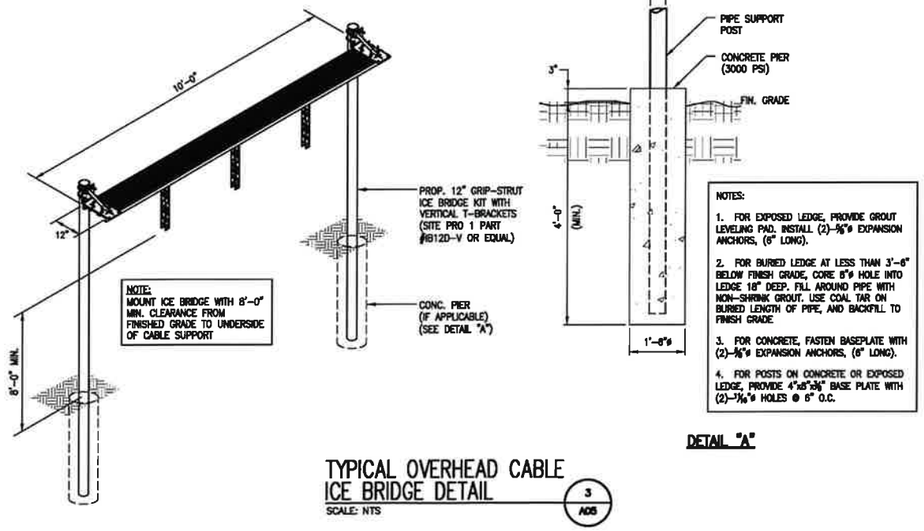
F. CHAMFER ALL EXPOSED EDGES 3/4".

G. THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F. TOTAL DELIVERY TIME SHALL BE LESS THAN 75 MINUTES.



CONCRETE PAD DETAIL 2 A05

SCALE: N.T.S.



DETAIL "A"

TYPICAL OVERHEAD CABLE ICE BRIDGE DETAIL 3 A05

SCALE: NTS

NOTE:
GENERATOR DIESEL TANK TO BE FILLED BY CONTRACTOR

GENERAC SD050 50kW AC 211 GALLON DIESEL GENERATOR

DIMENSIONS: 106.0"L x 38.0"W x 99.0"H
WEIGHT: 5,930 lbs
QUANTITY: TOTAL OF 1

GENERATOR DETAIL 4 A05

SCALE: N.T.S.

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SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE:	769831
MDG LOCATION ID:	8000819739

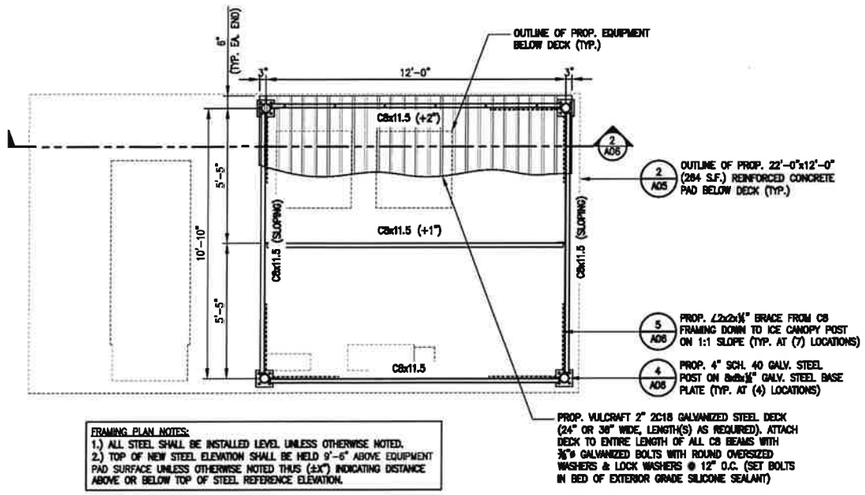
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A05

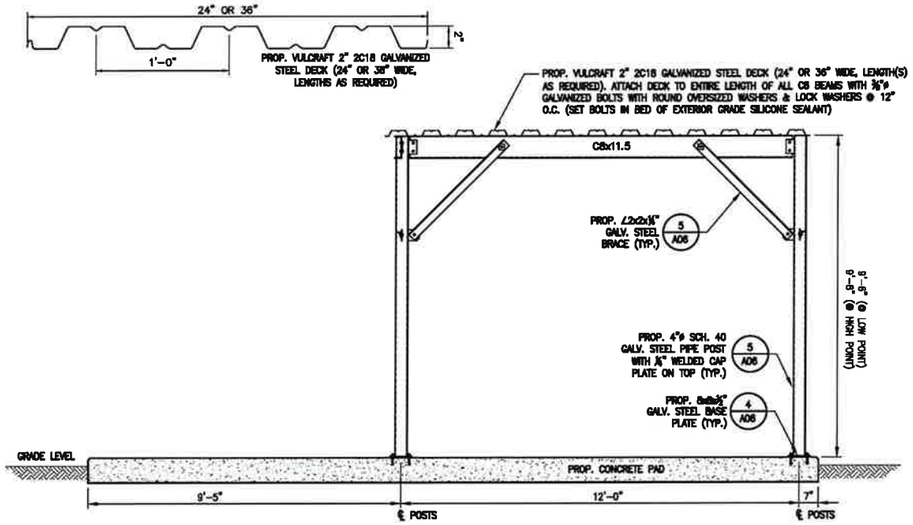
22136.00



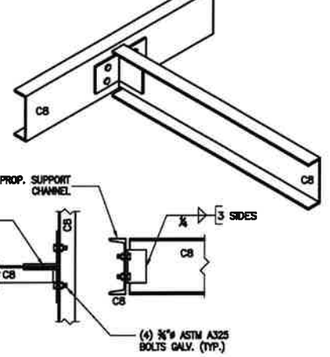
FRAMING PLAN NOTES:
1.) ALL STEEL SHALL BE INSTALLED LEVEL UNLESS OTHERWISE NOTED.
2.) TOP OF NEW STEEL ELEVATION SHALL BE HELD 9'-6" ABOVE EQUIPMENT PAD SURFACE UNLESS OTHERWISE NOTED THUS (±X") INDICATING DISTANCE ABOVE OR BELOW TOP OF STEEL REFERENCE ELEVATION.

ICE CANOPY FRAMING PLAN (1 A06)
SCALE: 3/8" = 1'-0"

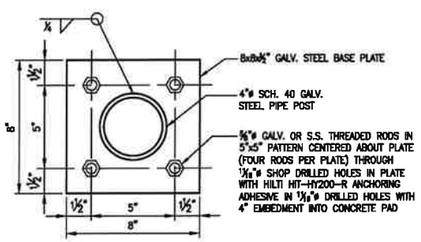
0 2'-8" 5'-4" 8'-0"



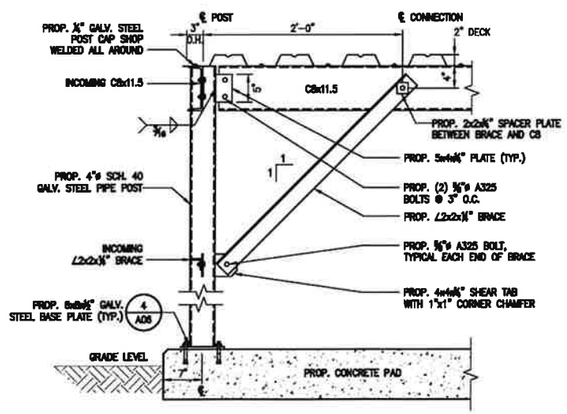
ICE CANOPY SECTION (2 A06)
SCALE: 1/2" = 1'-0"



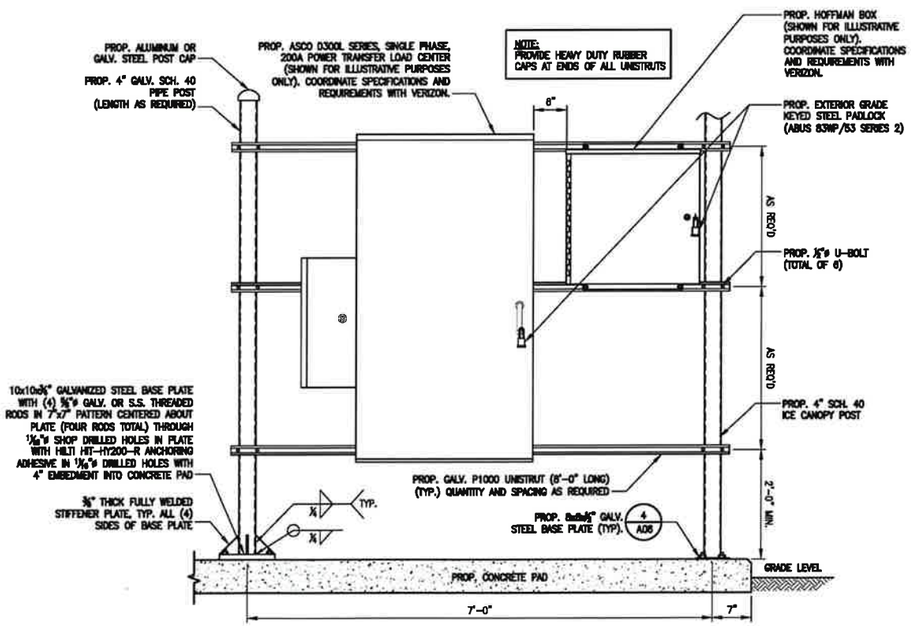
TYP. BEAM TO BEAM CONN. (3 A06)
SCALE: NOT TO SCALE



TYP. ICE CANOPY POST BASE PLATE (4 A06)
SCALE: NONE



TYP. ICE CANOPY POST DETAIL (5 A06)
SCALE: 1" = 1'-0"



H-FRAME DETAIL (6 A06)
SCALE: N.T.S.

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PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 765831
MDG LOCATION ID: 5000016739

SHEET TITLE

ICE CANOPY & H-FRAME DETAILS

SHEET NUMBER

A06

22136.001

FINAL EQUIPMENT CONFIGURATION

SECTOR	EQUIPMENT MAKE & MODEL	QTY	AZIMUTH (TRUE NORTH)	ANTENNA RAD	BAND	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	EQUIPMENT STATUS	H (IN)	W (IN)	D (IN)	WEIGHT (LBS)	HYBRID CABLE SIZE & QTY
ALPHA	COMMSCOPE NHH-65B-R2B ANTENNAS	2	50°	165'± AGL	LTE 700/850/1900/ 2100/850 5GNR	0°/0°/0°/0°/0°	2°/2°/0°/0°/2°	NEW	72.0	11.9	7.1	43.7	PROP. (2) 6x12 (1-5/8") HYBRIFLEX CABLES PROP. (8) 1x1 HYBRID JUMPERS PROP. (4) 1x4 HYBRID JUMPERS
	SAMSUNG MT6407-77A ANTENNA	1	50°	165'± AGL	5G LS8	0°	6°	NEW	35.2	18.1	5.6	87.1	
BETA	COMMSCOPE NHH-65B-R2B ANTENNAS	2	130°	165'± AGL	LTE 700/850/1900/ 2100/850 5GNR	0°/0°/0°/0°/0°	2°/2°/0°/0°/2°	NEW	72.0	11.9	7.1	43.7	
	SAMSUNG MT6407-77A ANTENNA	1	130°	165'± AGL	5G LS8	0°	6°	NEW	35.2	18.1	5.6	87.1	
GAMMA	COMMSCOPE NHH-65B-R2B ANTENNAS	2	300°	165'± AGL	LTE 700/850/1900/ 2100/850 5GNR	0°/0°/0°/0°/0°	2°/2°/0°/0°/2°	NEW	72.0	11.9	7.1	43.7	
	SAMSUNG MT6407-77A ANTENNA	1	300°	165'± AGL	5G LS8	0°	6°	NEW	35.2	18.1	5.6	87.1	
ALL	SAMSUNG B5/B13 RRH ORAN (RF4440d-13A) RADIOS	3	-	-	-	NEW	NEW	NEW	15.0	15.0	9.0	70.3	
	SAMSUNG B2/B66A RRH ORAN (RF3330d-25A) RADIOS	3	-	-	-	NEW	NEW	NEW	15.0	15.0	10.0	74.7	
	OVP 12	1	-	-	-	NEW	NEW	NEW	29.6	16.5	12.6	32.0	

NOTES:
1. "ETR" DENOTES "EXISTING TO REMAIN".
2. "ETRE" DENOTES "EXISTING TO BE REMOVED".
3. WEIGHTS LISTED ARE WITHOUT MOUNTING BRACKETS.
4. INFORMATION IS BASED ON RFDS DATED 03/17/23.

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	*EXISTING TO REMAIN:* *N/A* *EXISTING TO BE REMOVED:* *N/A*	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (1) 1/2" COAX CABLE FOR GPS ANTENNA (2) 6x12 (1-5/8") HYBRIFLEX CABLES (8) 1x1 HYBRID JUMPERS (4) 1x4 HYBRID JUMPERS	

NOTE:
EXISTING VERIZON EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

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PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 769831
MDG LOCATION ID: 10009167391

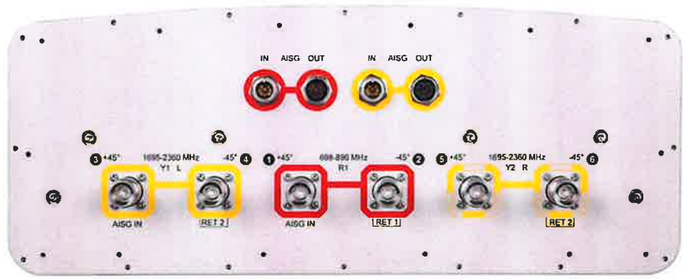
SHEET TITLE

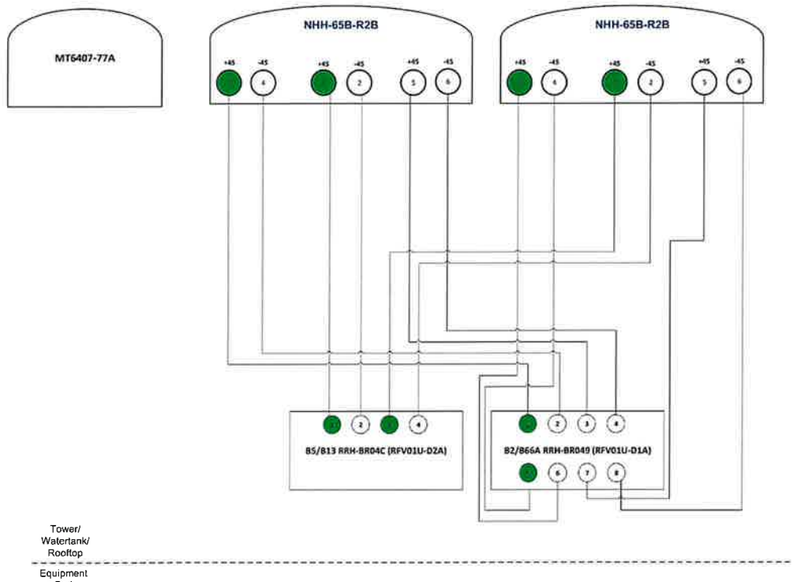
RF DATA

SHEET NUMBER

RF01

22134.001

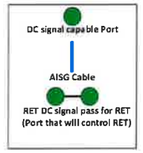




NHH-45B-R2B

- Ports 1 & 2 are for 700MHz and 850MHz
- Ports 3, 4, 5, & 6 are for AWS/PCS (1695-2180 MHz)
- Smart Bias Tee (SBT) is through port 1 for low band and port 3 for high band.
- AISG cable is only needed when drawn in the diagrams below, if it is not drawn then SBT is enough to control all RET motors.
- Not all SBT ports are needed to control RET, only green port connection to green port will control RET.

RET DC signal pass for RET
(Port that will control RET)



Comments:

Diagram shows configuration as viewed from below antennas

Cap and weatherproof unused antenna ports

CDMA not shown (not being changed)

All plumbing diagram colors are irrelevant except for AISG cable. (For the coax colors follow Coax Colors guide)

RF PLUMBING DIAGRAM (1 / RF02)
SCALE: N.T.S.

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160 WITCH MEADOW ROAD
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VZW LOCATION CODE:	769831
MDG LOCATION ID:	8000016739

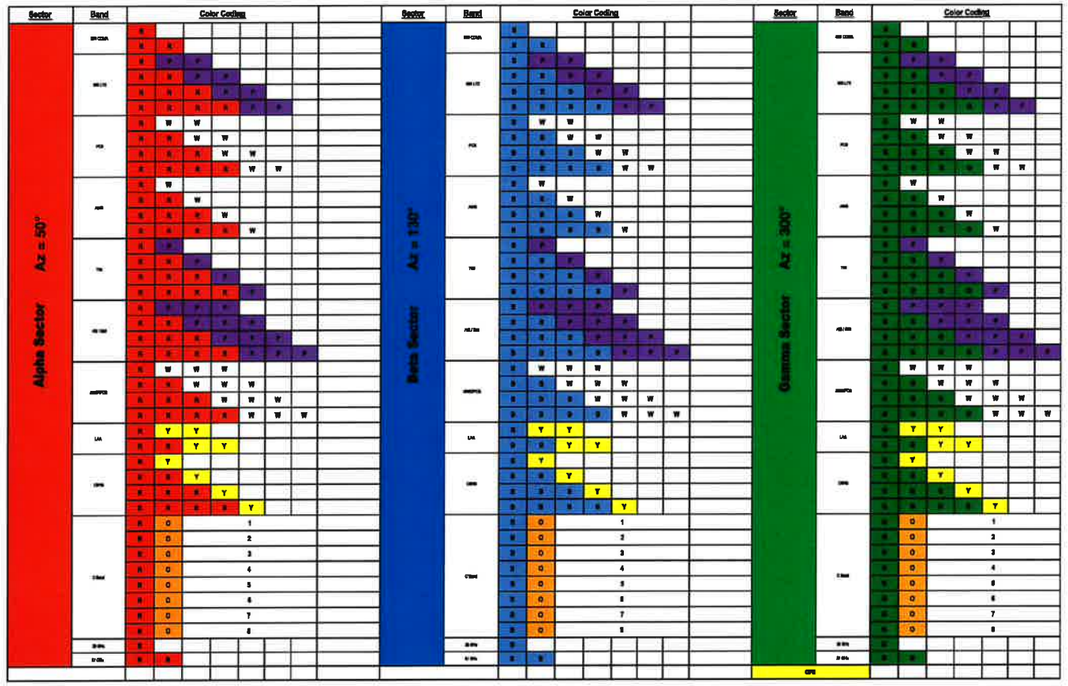
SHEET TITLE

RF PLUMBING DIAGRAM

SHEET NUMBER

RF02

22138.001



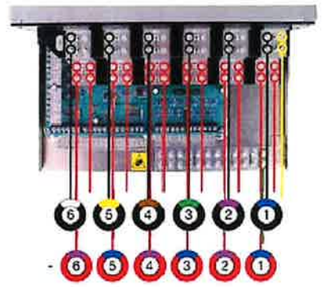
CABLE NOTE:
SEE FEEDLINE SCHEDULE A & B ON SHEET RF01
FOR EXISTING & PROPOSED CABLE QUANTITIES.

LINE COLOR CODE SPECIFICATIONS (1 / RF03)
SCALE: N.T.S.

Hybrid Cable on Towers

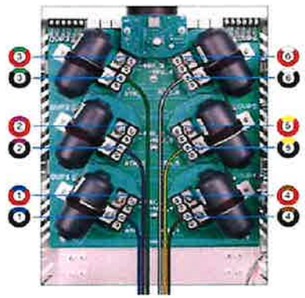
Hybrid Cable 1

Sector	Identification Color	-48V	RTN
700 Alpha	Blue		
AWS Alpha	Violet		
PCS Alpha	Green		
850 Alpha	Brown		
Spare	Yellow		
Spare	White		



Hybrid Cable 2

Sector	Identification Color	-48V	RTN
700 Beta	Blue		
AWS Beta	Violet		
PCS Beta	Green		
850 Beta	Brown		
Spare	Yellow		
Spare	White		



HYBRID CABLE COLOR CODE SPECIFICATIONS (2 / RF03)
SCALE: N.T.S.

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0	01/09/23	ISSUED FOR REVIEW	CMC

PROJECT NAME & ADDRESS
SALEM NORTH CT
160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 766831
MDG LOCATION ID: 8000916739

SHEET TITLE
RF COLOR CODE SPECIFICATIONS

SHEET NUMBER
RF03

22138.001

ELECTRICAL SPECIFICATIONS

1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO MAKE READY FOR USE THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS. MAKE ALL NECESSARY CONNECTIONS AT "PACKAGED" EQUIPMENT.
2. THE ELECTRICAL SYSTEMS SHALL BE SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. ALL MATERIAL AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THE WORK SHALL BE FURNISHED AT NO EXTRA COST.
3. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND NATIONAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   THE 2022 CONNECTICUT STATE BUILDING CODE
   THE 2017 NATIONAL ELECTRICAL CODE (NFPA-70)
   THE CONNECTICUT ELECTRIC CODE
   THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
   THE LIFE SAFETY CODE (NFPA 101)
   THE STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURE AND ANTENNAS (TIA/EIA-222-G)
4. MATERIALS AND EQUIPMENT SHALL BE NEW, UNUSED AND UNDERWRITERS' LABORATORIES, INC. LISTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS IN A TIMELY FASHION, INCLUDING RESPONSIBILITY FOR DETERMINING AVAILABILITY/LEAD TIME FOR ALL NECESSARY EQUIPMENT.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES FOR PERMITS AND INSPECTIONS. WHERE NEW COMMERCIAL POWER SERVICE IS PROVIDED TO THE SITE, OR EXISTING SERVICE MUST BE MODIFIED, CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE ELECTRIC UTILITY, SHALL PERFORM ALL OF HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY, AND SHALL PAY ALL UTILITY SERVICE BACK CHARGES.
6. ALL WIRING OUTSIDE SHALL BE INSTALLED IN HEAVY-GAUGE, (SCHEDULE 40) RIGID STEEL CONDUIT, HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE WITH AN ADDITIONAL FACTORY-APPLIED FINISH INSIDE AND OUTSIDE. CUT ENDS SHALL BE REAMED, THREADED AND COLD GALVANIZED. NO COMPRESSION FITTING WILL BE ACCEPTED.
7. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 AND INSTALLED NOT LESS THAN 30 INCHES BELOW FINISHED GRADE.
8. WIRING INSTALLED IN THE BUILDING THAT IS SHOWN TO BE IN CONDUIT SHALL BE INSTALLED IN EMT. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
9. LIQUID TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL MOTOR TERMINATIONS AND FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION. FLEXIBLE METAL CONDUIT SHALL CONSIST OF A FLEXIBLE, CORROSION RESISTANT METAL CORE WITH AN EXTRUDED, WATERTIGHT, SYNTHETIC JACKET. CONDUITS SMALLER THAN 1-1/2" SHALL HAVE A CONTINUOUS GROUND CONDUCTOR UNDER THE JACKET.
10. NO CONDUIT SMALLER THAN 3/4" ELECTRICAL TRADE SIZE SHALL BE USED, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS. BOX SIZES SHALL BE 4" SQUARE MINIMUM, BUT NOT LESS THAN THAT REQUIRED BY THE CONNECTICUT ELECTRICAL CODE.
11. FITTINGS AND EXPOSED SWITCH, OUTLET AND CONTROL STATION BOXES AND OTHER EXPOSED BOXES 4" SQUARE SHALL BE CAST OR MALLEABLE IRON WITH CADMIUM-ZINC FINISH AND CAST COVERS WITH STAINLESS STEEL SCREWS.
12. FLUSH SWITCH AND OUTLET BOXES SHALL BE HOT-DIPPED GALVANIZED, PRESSED STEEL WITH NYLON COVER PLATES, COLOR AS DETERMINED BY THE ENGINEER.
13. EXCEPT AS OTHERWISE SHOWN, TERMINAL, JUNCTION AND PULL BOXES LARGER THAT 4" SQUARE SHALL BE SHEET STEEL. STEEL BOXES SHALL BE HOT-DIPPED GALVANIZED. BOXES AND COVERS SHALL BE NOT LESS THAN 14 GAUGE METAL. COVERS SHALL BE GASKETED AND FASTENED WITH STAINLESS STEEL HARDWARE.
14. FITTINGS USED WITH LIQUID TIGHT, FLEXIBLE CONDUIT SHALL BE OF THE SCREW-IN, COMPRESSION TYPE WITH SEALING RING. FITTINGS LARGER THAN 1-1/4" SHALL BE FURNISHED WITH INTEGRAL GROUND LUGS.
15. HANGERS, RODS, BACK PLATES, BEAM CLAMPS, ETC. SHALL BE GALVANIZED IRON OR STEEL. CONDUITS SHALL BE SUPPORTED AT LEAST EVERY 5 FEET.
16. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS. CONDUIT RUNS SHALL BE STRAIGHT AND TRUE. CONDUIT SHALL BE SUPPORTED BY MEANS OF TWO-HOLE PIPE CLAMPS. BACK PLATES SHALL BE INSTALLED WHERE REQUIRED TO RAISE CONDUITS FROM THE SURFACE. MULTIPLE, HORIZONTAL RUNS SHALL BE SUPPORTED ON TRAPEZE HANGERS WITH STEEL HORIZONTAL MEMBERS AND THREADED RODS NOT LESS THAN 3/8 INCHES IN DIAMETER. HANGERS SHALL BE ATTACHED TO STRUCTURAL STEEL BY MEANS OF BEAM CLAMPS. SPOT TYPE INSERTS SHALL BE USED IN CONCRETE.
17. CONDUIT BENDS SHALL BE CAREFULLY MADE TO PREVENT DISTORTION OF THE CIRCULAR CROSS-SECTION. NO CONDUIT RUN SHALL HAVE MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN PULLING POINTS. CHANGES IN DIRECTION SHALL BE MADE WITH BENDS, STANDARD ELBOWS AND PULLBOXES. BENDS IN PARALLEL RUNS SHALL BE CONCENTRIC.
18. CONDUIT SHALL NOT BE SUPPORTED FROM PIPING, PIPING SUPPORTS, DUCTWORK, SUSPENDED CEILING SUPPORTS OR MECHANICAL EQUIPMENT SUBJECT TO VIBRATION OR REMOVAL.
19. THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY PLUGGED DURING BUILDING CONSTRUCTION UNTIL WIRES ARE TO BE PULLED. SPARE CONDUITS SHALL BE FURNISHED WITH THREADED CAPS.
20. CONDUITS SHALL BE TERMINATED AT UNGASKETED SHEET STEEL BOXES AND ENCLOSURES WITH DOUBLE LOCK NUTS AND SUITABLE BUSHINGS. BUSHINGS INSTALLED ON CONDUITS CONTAINING GROUND WIRES SHALL BE GROUNDING TYPE. CONDUITS SHALL BE TERMINATED AT GASKETED SHEET METAL BOXES AND ENCLOSURES WITH CONDUIT HUBS.
21. CONDUCTORS SHALL BE ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT-DRAWN COPPER. NO CONDUCTOR SMALLER THAT NO. 12 AWG SHALL BE USED, EXCEPT AS OTHERWISE NOTED.
22. WIRE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE 600 VOLT, TYPE THWN. WIRE FOR CONTROL CIRCUITS SHALL BE 600 VOLT, TYPE THWN, NO. 14 AWG, STRANDED. SERVICE CONDUCTORS AND FEEDERS SHALL BE TYPE XHHW. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID. NO. 8 AWG AND LARGER SHALL BE STRANDED..
23. ALL CONDUCTORS SHALL BE CAREFULLY HANDLED TO AVOID KINKS OR DAMAGE TO INSULATION. LUBRICATIONS SHALL BE USED TO FACILITATE WIRE PULLING. LUBRICANTS SHALL BE UL LISTED FOR USE WITH THE INSULATION SPECIFIED.
24. ALL EQUIPMENT AND MATERIALS SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE CONNECTICUT ELECTRICAL CODE, AND THE STANDARD REQUIREMENTS OF VERIZON WIRELESS AND LUCENT.
25. DISCONNECT SWITCHES SHALL BE 480 OR 240 VOLT, HEAVY-DUTY, QUICK-MAKE, QUICK BREAK, VISIBLE BLADE, 2 POLE WITH EXTERNAL OPERATING HANDLE AND FULL COVER INTERLOCK. SWITCHES INSTALLED OUTSIDE SHALL BE NEMA TYPE 3R ENCLOSED.
26. WALL SWITCHES SHALL BE SINGLE POLE 3-WAY OR 4-WAY, INDICATING, TOGGLE-ACTION, FLUSH, QUIET TYPE, SPECIFICATION GRADE, RATED 20 AMPERE, 120-277 VOLT. COLOR AS DETERMINED BY ENGINEER.
27. GENERAL PURPOSE RECEPTACLES SHALL BE DUPLEX, 2 POLE, 3 WIRE, STRAIGHT BLADE, NYLON FACE, GROUNDING TYPE, 20 AMPERE, 125 VOLT, SPECIFICATION GRADE. COLOR AS DETERMINED BY ENGINEER.
28. PANELS SHALL BE PER DIRECTED BY THESE DRAWINGS WITH TYPED DIRECTORIES.
29. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC TYPE WITH RMS SYMMETRICAL INTERRUPTING RATING OF NOT LESS THAN 22,000 AMPERE FOR 240 VOLT BREAKERS. ENCLOSED BREAKERS SHALL HAVE PADLOCKING PROVISIONS AND EXTERNAL OPERATING HANDLE WITH FULL COVER INTERLOCK. BREAKERS SHALL BE 1" MODULES MINIMUM.
30. NAMEPLATES SHALL BE PROVIDED FOR ALL EQUIPMENT INDICATING VOLTAGE, PHASE, USE AND SOURCE OF ORIGIN. DEVICES SHALL BE LABELED INDICATING VOLTAGE AND BRANCH CIRCUIT. BRANCH CONDUCTORS SHALL BE LABELED INDICATING BRANCH CIRCUIT. FEEDER CONDUCTORS SHALL INDICATE PHASE.
31. ALL EXTERIOR CONDUCTOR/LUG TERMINALS SHALL HAVE AN ANTIOXIDANT APPLIED.
32. ALL SPRING TYPE WIRE CONDUCTORS USED IN EXTERIOR BOXES SHALL BE SILICON FILLED.
33. ELECTRICAL CONTRACTOR SHALL AS PART OF HIS WORK INCLUDE ALL FITTINGS, SLEEVES AND MINOR CUTTING REQUIRED FOR HIS WORK, INCLUDING FIRES-STOPPING.
34. THE ELECTRICAL CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE HIS OWN, WHERE DIRECTED, STORAGE AND OFFICE SPACE.
35. FIVE COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
36. ELECTRICAL CONTRACTOR'S WORK SHALL INCLUDE ALL LABOR AND MATERIALS, SCAFFOLDING TOOL AND TRANSPORTATION NECESSARY FOR COMPLETE INSTALLATION.
37. ELECTRICAL CONTRACTOR TO FURNISH ENGINEER ONE SET OF MYLARS OF "AS BUILT" DRAWINGS.
38. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY POWER & LIGHTING AS REQ'D.

GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS.
2. BRANCH CIRCUIT RUNS 100 FT AND OVER SHALL BE #10 AWG CONDUCTORS.
3. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHT, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PLUMBING CONTRACTORS AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT, THE POWER WIRING, THE CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS REQUIRED BY THIS CONTRACTOR FOR COMPLETELY OPERATIVE HVAC AND PLUMBING SYSTEMS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. INTERRUPTIONS TO THE EXISTING ELECTRICAL SERVICE FOR SPLICING CONNECTIONS, RENOVATION OF EXISTING DISTRIBUTION, BRANCH CIRCUITS, INSTALLATION OF NEW ELECTRIC SERVICE, AND SHALL BE AS SHORT AS POSSIBLE, AND TO THE CONVENIENCE OF THE OWNER.
6. ALL CONDUIT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. NO INTERIOR HORIZONTAL CONDUIT BELOW 7'-8" AFF IN FINISHED SPACES.
7. ALL WIRING TO BE 3/4"C, 2#12 & 1#12 GROUND, UNLESS OTHERWISE NOTED.
8. NO BX OR ROMEX CABLE IS PERMITTED.
9. ALL WIRING DEVICES AND EQUIPMENT SHALL BE 20A SPECIFICATION GRADE AND UL LISTED.
10. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED.
11. ALL RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS.
12. ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE PVC SLEEVES.
13. ALL SWITCHES SHALL BE FORTY-EGHT (48) INCHES AFF, UNLESS OTHERWISE NOTED.
14. ALL RECEPTACLES SHALL BE EIGHTEEN (18) INCHES AFF, UNLESS OTHERWISE NOTED.
15. ALL WIRING SHALL BE IN METAL RACEWAY & NO. 12 AWG COPPER MIN. UNLESS OTHERWISE NOTED.
16. WIRE COLOR SHALL BE PER STANDARD CODING BY PHASE.
17. FOR UTILITY BILLING, PLEASE SEND TO:
    VERIZON WIRELESS
    20 ALEXANDER DRIVE
    WALLINGFORD, CT 06492

GROUNDING GENERAL NOTES

1. ALL EXTERIOR CONDUCTORS SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. MINIMUM BEND RADIUS SHALL BE EIGHT (8) INCHES.
2. ALL CONNECTIONS TO HALO GROUND RING AND ALL CABLE TRAY JUMPERS SHALL BE #6 AWG, INSULATED, STRANDED, COPPER WIRE.
3. ALL WIRE-TO-WIRE CONNECTIONS SHALL BE THREE-CLAMP, C TAP COMPRESSION (T&B #54740 ORANGE OR EQUIVALENT). ALL GROUND BAR CONNECTIONS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS (T&B OR EQUIVALENT). ALL OTHER CONNECTIONS TO STEEL SURFACES SHALL USE LUG-TYPE CONNECTORS.
4. MECHANICALLY BOND ANTENNA MOUNTS WITH #2 AWG, BARE, STRANDED CONDUCTORS.
5. ALL GROUNDING WORK SHALL COMPLY WITH VERIZON WIRELESS STANDARDS.
6. CONNECT GROUND CONDUCTOR TO EXISTING GROUNDING SYSTEM. ATTACH TO WALLS, PARAPET, CABLE TRAY, ETC. WITH A CLAMPS AS NECESSARY. REMOVE PAINT, FIREPROOFING, MILL SCALE, ETC. TO ACHIEVE GOOD CAD WELD GROUND CONNECTION.
7. CONNECT TO HALO GROUND USING C-TAP (#54730).
8. CONNECT TO ENCLOSURES USING BLUE GROUND LUGS.

LEGEND

ELECTRICAL SYMBOLS

- METER
- GROUND ROD/TEST (OBSERVATION) WELL
- GROUND ROD
- CADWELD TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- GROUNDING WIRE
- E02 — REPRESENTS DETAIL NUMBER
- 1'X4' SURFACE MTD. FLUORESCENT LIGHTING FIXTURE
- SELF CONTAINED EMERG. LIGHTING UNIT
- S — 20A-120V-1P TOGGLE SWITCH
- MAGNETIC DOOR SWITCH (DOOR JAMB TYPE)
- 20A-120V QUADRAPLEX RECEPTACLE, GROUNDING TYPE, 2-CKT. NO.
- WP/GFI — 20A-120V DUPLEX RECEPTACLE, GROUNDING TYPE. WP = WEATHERPROOF GFI = GROUND FAULT
- TL — SIMPLEX RECEPTACLE, GROUNDING TYPE. TL = TWIST LOCK
- JUNCTION BOX
- PANELBOARD 'P1'
- * — MOTOR - NUMERAL DENOTES HORSEPOWER
- WEATHER PROOF DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH - '3R' & '1' - NEMA ENCLOSURE
- * T — THERMOSTAT *T_{HI} - HI TEMPERATURE ALARM THERMOSTAT
- * H — HUMIDISTAT *$H_{HI/LO}$ - HI/LO HUMIDITY ALARM HUMIDISTAT
- COMBINATION SMOKE/HEAT DETECTOR WITH MINI HORN SIMPLEX CAT.#2098-9898 WITH FORM A & C CONTACTS
- P1-2 — HOMERUN TO PANEL (FURNISH & INSTALLED BY MECHANICAL)
- SURGE ARRESTOR - JOSLYN CAT. NO. 1455-65
- AFF — ABOVE FINISHED FLOOR
- * — MOTORIZED DAMPER
- 3/4"C — EXPOSED CONDUIT 2#12-3/4"C.
- TC — ALARM TERMINAL CABINET

* EQUIPMENT FURNISHED AND INSTALLED BY OTHERS AND WIRED BY THIS CONTRACTOR

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
GPS	GLOBAL POSITIONING SYSTEM
PCS	PERSONAL COMMUNICATION SYSTEM
RWY	RACEWAY
TYP.	TYPICAL
RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING
DWG	DRAWING
EMT	INTERIOR GROUND RING (HALO)
GEN	GENERATOR
GR	GROWTH
CGBE	COAX GROUND BAR EXTERNAL
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER GROUND BAR
PVC	RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
EBH	ETHERNET BACK HAUL

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492
(203) 741-7338

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134 FLANDERS ROAD, SUITE 125
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CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/20/2023

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/20/23	CONSTRUCTION REVISED	CMC
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0	01/06/23	ISSUED FOR REVIEW	CMC

PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 708831

MDG LOCATION ID: 8000916730

SHEET TITLE

ELECTRICAL SPECIFICATIONS & NOTES

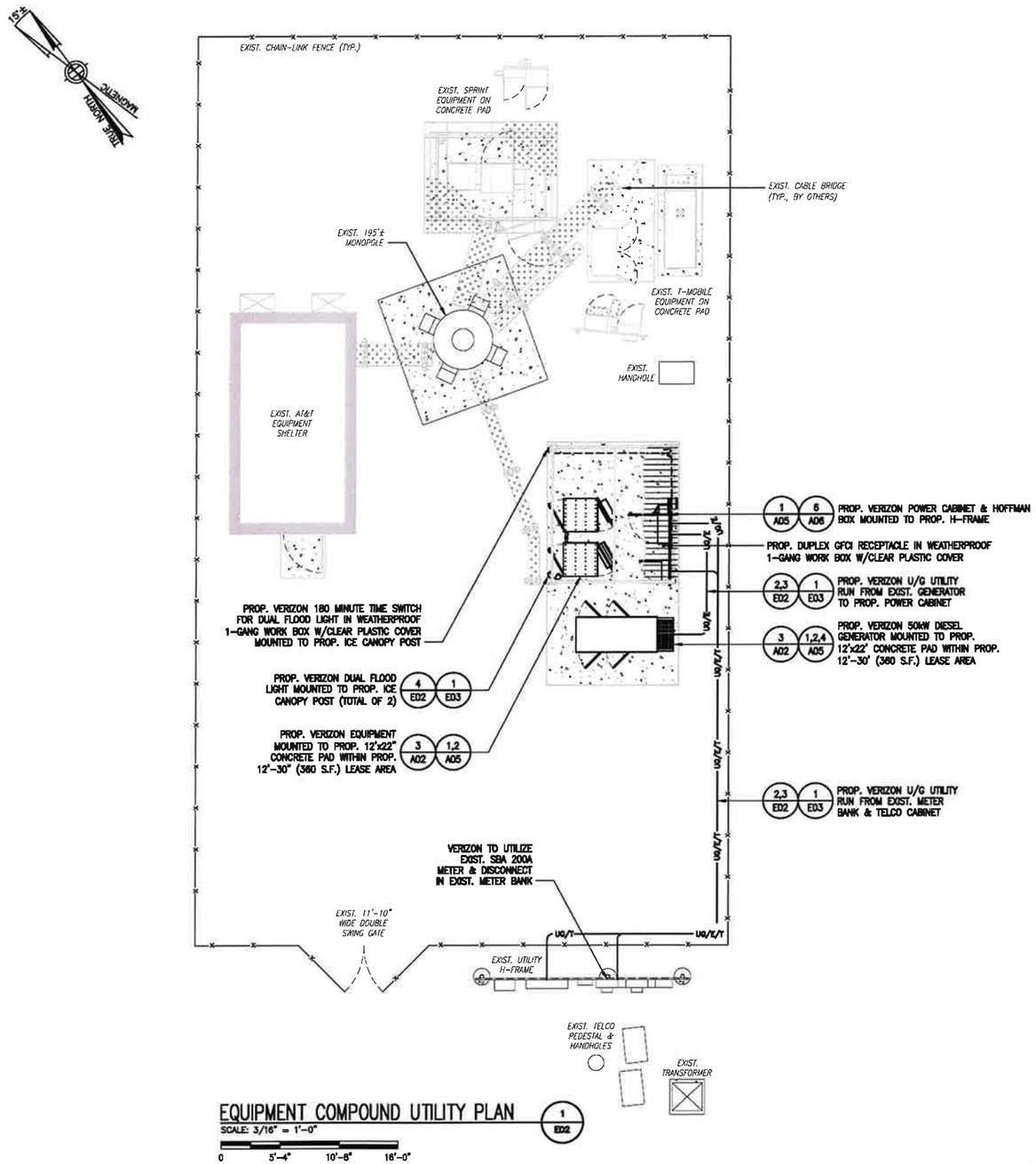
SHEET NUMBER

E01

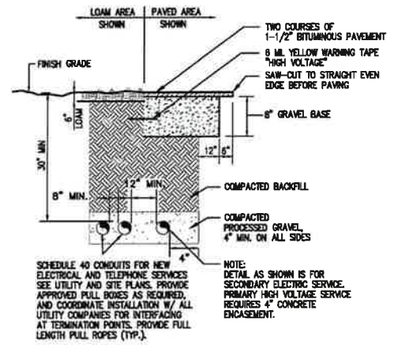
22136.001

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

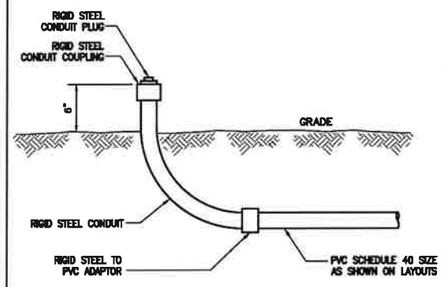
SPECIAL CONSTRUCTION WORK NOTE (HAND DUG UTILITY TRENCH EXCAVATION REQUIRED):
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH SUFFICIENT TEST HOLES OR AS DIRECTED/REQUIRED BY SBA REGIONAL SITE MANAGER SHALL HAND-EXCAVATE ALL PROPOSED UNDERGROUND UTILITY TRENCHES. GENERAL CONTRACTOR RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF EXISTING UNDERGROUND UTILITIES, PHYSICAL DAMAGE REPAIR, AND SERVICE RESTORATION.



EQUIPMENT COMPOUND UTILITY PLAN (1 / E02)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"



TYPICAL BURIED CONDUIT DETAIL (2 / E02)
SCALE: NONE



TYPICAL CONDUIT STUB-UP DETAIL (3 / E02)
SCALE: NONE

RAB LIGHTING - BULLET2X12B
24W
BLACK

MOUNT PER MANUFACTURER'S SPECIFICATIONS

TYPICAL LED FLOOD LIGHT DETAIL (4 / E02)
SCALE: N.T.S.

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492
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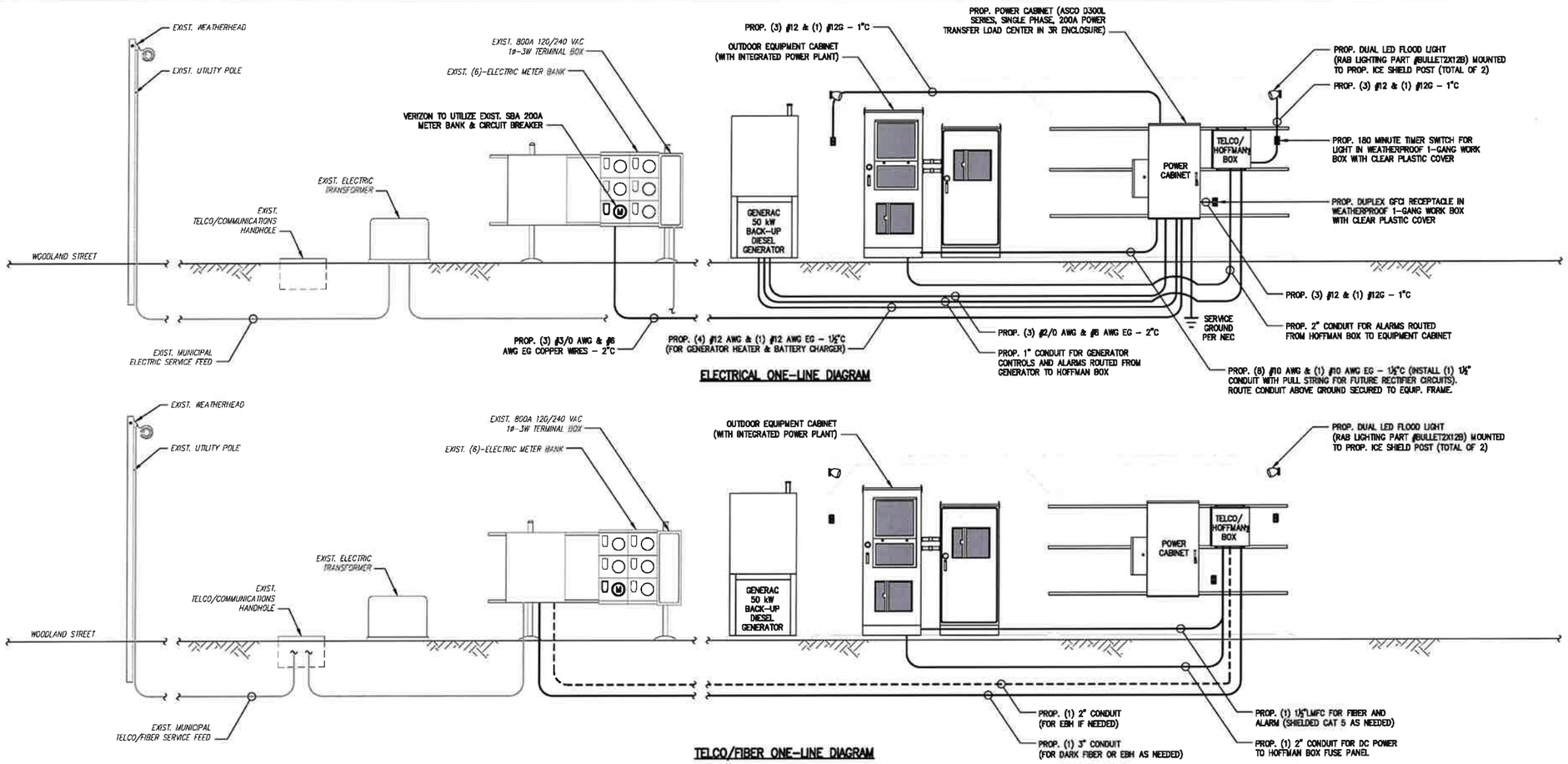
PROJECT NAME & ADDRESS
SALEM NORTH CT
160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 769831
MDG LOCATION ID: 800016739

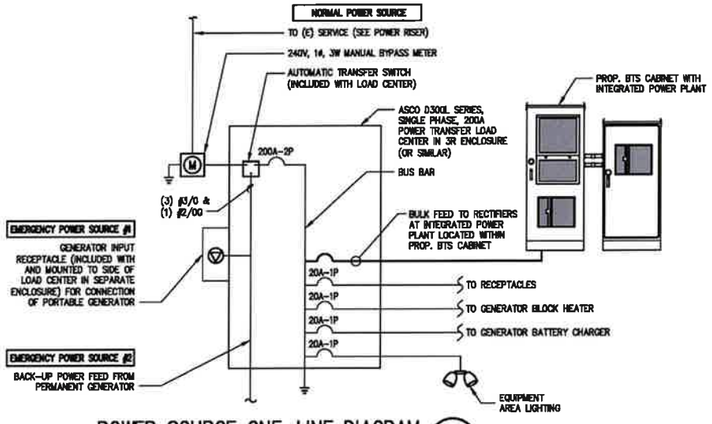
SHEET TITLE
EQUIPMENT COMPOUND UTILITY PLAN & DETAILS

SHEET NUMBER
E02

22138.001



UTILTY ONE-LINE DIAGRAMS (1 / E03)
SCALE: NOT TO SCALE



POWER SOURCE ONE-LINE DIAGRAM (2 / E03)
SCALE: NOT TO SCALE

ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE

ELECTRICAL PANEL SCHEDULE

65,000 A.I.C. NEMA 3R

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	RECTIFIER #1	30	30	FUTURE RECTIFIER	2
3					4
5	RECTIFIER #2	30	30	FUTURE RECTIFIER	6
7					8
9	RECTIFIER #3	30	20	PAD LIGHTING	10
11			–	BLANK	12
13	RECTIFIER #4	30	–	BLANK	14
15			–	BLANK	16
17	GFCI RECEPTACLE/LIGHT	20	–	BLANK	18
19	GENERATOR BLOCK HEATER	20	–	BLANK	20
21	GENERATOR BATTERY CHARGER	20	–	BLANK	22
23	BLANK	–	–	BLANK	24
25	BLANK	–	–	BLANK	26
27	BLANK	–	–	BLANK	28
29	BLANK	–	–	BLANK	30

ELECTRICAL PANEL SCHEDULE (3 / E03)
SCALE: NTS

ONE-LINE DIAGRAM NOTES:
1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS INSIDE AND OUT.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

3) ALL CONDUIT ROUTING SHOWN ON THESE DIAGRAMS IS SCHEMATIC IN NATURE AND INTENDED TO CONVEY GENERAL INTENT ONLY.

4) ALL PROPOSED UTILITY DESIGN ELEMENTS SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN TO BE PROVIDED BY UTILITY PROVIDERS AND VERIZON WIRELESS. CONTRACTOR SHALL OBTAIN A COPY OF THE FINAL UTILITY DESIGN BY UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK.

UTILITY CONTACTS

ELECTRICAL: EVERSOURCE ENERGY
247 STATION DRIVE, SE 210
WESTWOOD, MA 02090
(781) 441-3610

TELEPHONE: VERIZON
185 FRANKLIN STREET
BOSTON, MA 02107
(800) 841-9800

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492
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3/20/2023

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SALEM, CT 06420

VZW LOCATION CODE: 769831

MDG LOCATION ID: 10009167391

SHEET TITLE

ELECTRIC/TELCO/FIBER DIAGRAMS & PANEL SCHEDULE

SHEET NUMBER

E03

22136.001

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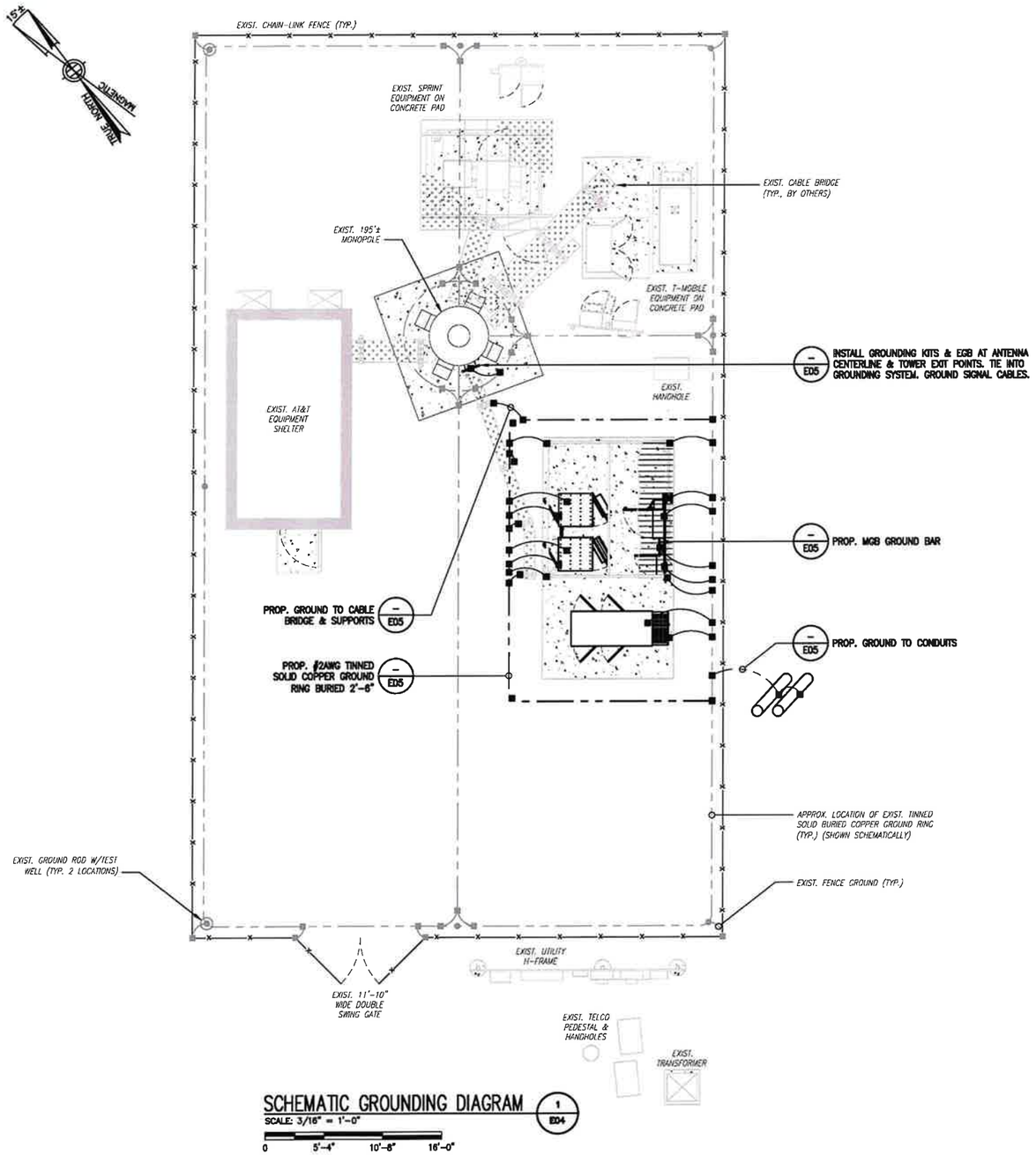
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

SPECIAL CONSTRUCTION WORK NOTE (HAND DUG UTILITY TRENCH EXCAVATION REQUIRED):
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH SUFFICIENT TEST HOLES OR AS DIRECTED/REQUIRED BY SBA REGIONAL SITE MANAGER SHALL HAND-EXCAVATE ALL PROPOSED UNDERGROUND UTILITY TRENCHES. GENERAL CONTRACTOR RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF EXISTING UNDERGROUND UTILITIES, PHYSICAL DAMAGE REPAIR, AND SERVICE RESTORATION.



SCHEMATIC GROUNDING DIAGRAM 1/E04
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

GROUNDING LEGEND

- EXOTHERMIC GROUND
- GROUND ROD
- TEST WELL
- PROP. #2 AWG EQUIPMENT GROUNDING
- PROP. GROUND HALO
- EXIST. SITE GROUNDING (SHOWN SCHEMATICALLY)

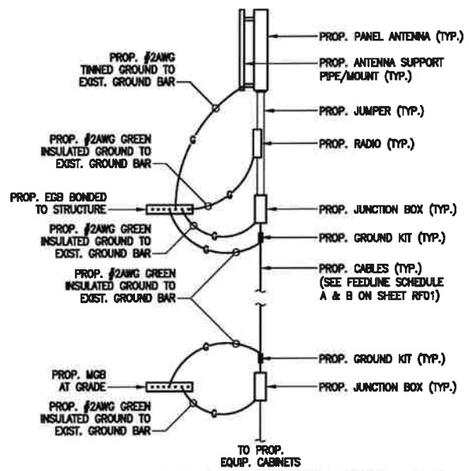
ELECTRICAL AND GROUNDING NOTES:

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1ø, 60 Hz.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

GROUNDING

5. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
12. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
15. ANTENNA GROUND KITS SHALL BE FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.



TYP. ANTENNA GROUNDING RISER 2/E04
SCALE: NOT TO SCALE

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492
(203) 741-7338

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720

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201 BOSTON POST ROAD WEST, SUITE 101
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/20/2023

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/20/23	CONSTRUCTION REVISED	CMC
2	03/13/23	CONSTRUCTION REVISED	CMC
1	01/19/23	ISSUED FOR CONSTRUCTION	CMC
0	01/09/23	ISSUED FOR REVIEW	CMC

PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 769831
MDG LOCATION ID: 8000916738

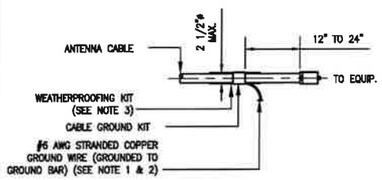
SHEET TITLE

SCHEMATIC GROUNDING PLAN & RISER DIAGRAM

SHEET NUMBER

E04

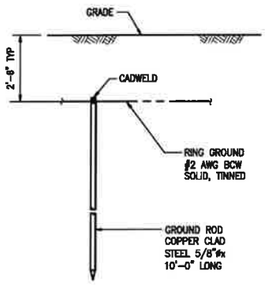
22136.001



NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND & ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE & PART NUMBER AS SUPPLIED OR RECOMMENED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

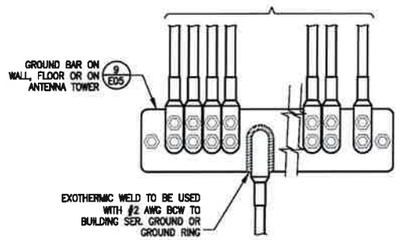
CONN. OF CABLE GROUND KIT TO ANTENNA CABLE

SCALE: N.T.S. — 1 / E05



GROUND ROD

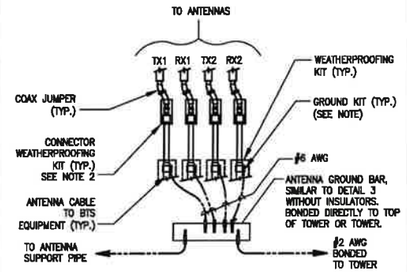
SCALE: N.T.S. — 2 / E05



NOTE:
GROUND BARS AT THE BOTTOM OF TOWER SHALL ONLY USE EXOTHERMIC WELDS.

INSTALLATION OF GROUND WIRE TO GROUND BAR

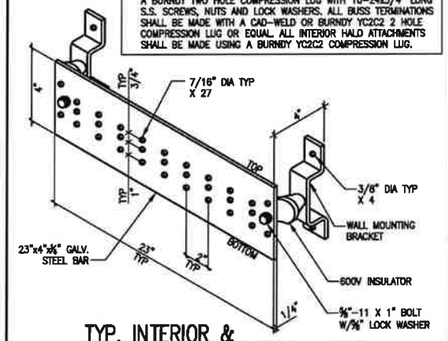
SCALE: N.T.S. — 3 / E05



CONN. OF GROUND WIRE TO GROUND BAR (TOWER)

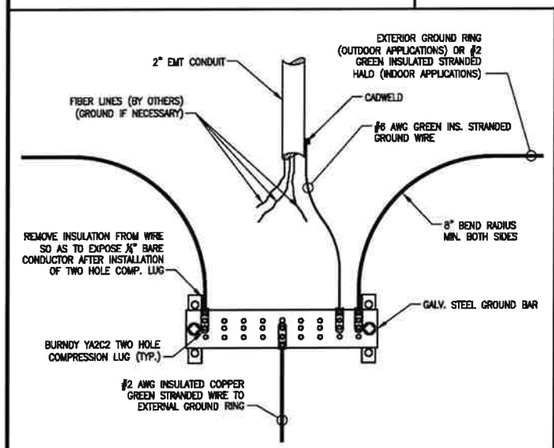
SCALE: N.T.S. — 4 / E05

NOTES:
1. SURFACE PREPERATION: ALL CONNECTIONS MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE MADE BARE TO ENSURE PROPER CONTACT. NO WASHERS SHALL BE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS SHALL HAVE AN ANTI-OXIDANT AGENT APPLIED PRIOR TO INSTALLATION.
2. BUSS PREPERATION: ALL GALV. STEEL BUSSES SHALL BE CLEANED, POLISHED AND AN ANTI-OXIDANT APPLIED. NO FINGERPRINTS OR DISCOLORED STEEL WILL BE PERMITTED.
3. TERMINATIONS: ALL EQUIPMENT TERMINATIONS SHALL BE MADE WITH A BURNDY TWO HOLE COMPRESSION LUG WITH 10-24x3/4" LONG S.S. SCREWS, NUTS AND LOCK WASHERS. ALL BUSS TERMINATIONS SHALL BE MADE WITH A CAD-WELD OR BURNDY YC2C2 2 HOLE COMPRESSION LUG OR EQUAL. ALL INTERIOR HALD ATTACHMENTS SHALL BE MADE USING A BURNDY YC2C2 COMPRESSION LUG.



TYP. INTERIOR & EXTERIOR GROUND BAR

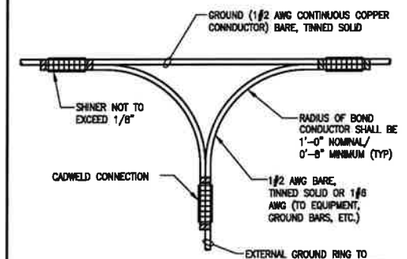
SCALE: N.T.S. — 5 / E05



NOTE:
IF AN ENTRY PORT IS USED FOR THE FIBER ENTRY, THE PORT MUST BE GROUNDED TO THE GROUND BAR WITH A #2 GREEN COPPER STRANDED WIRE.

INTERIOR GROUNDING AT TELCO ENTRY

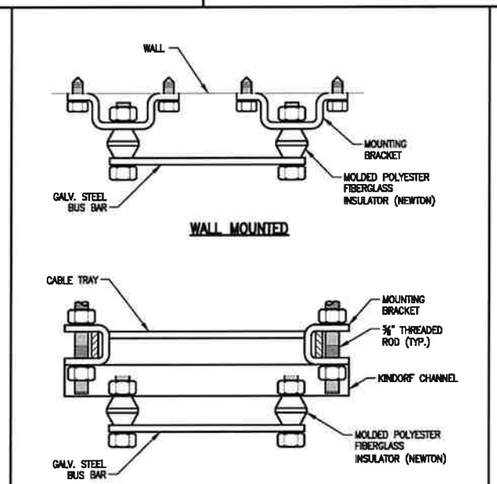
SCALE: N.T.S. — 6 / E05



NOTE:
ALL CONNECTIONS TO GROUND SHALL BE NON-DIRECTIONAL.

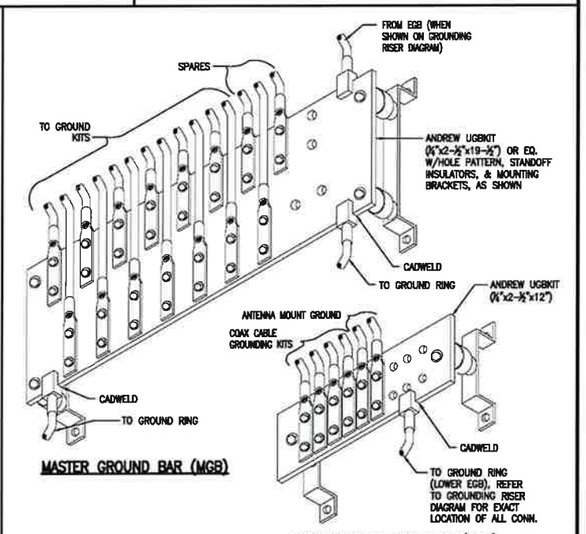
NON-DIRECTIONAL SPLICE

SCALE: N.T.S. — 7 / E05



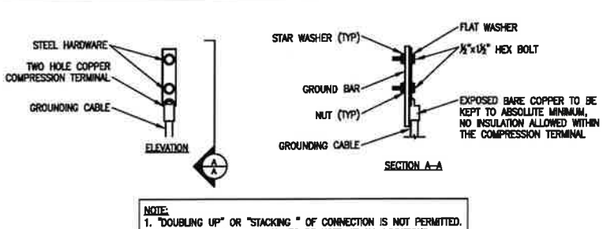
BUS BAR MOUNTING

SCALE: N.T.S. — 8 / E05



GROUND BAR DETAILS

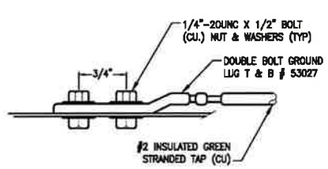
SCALE: N.T.S. — 9 / E05



NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

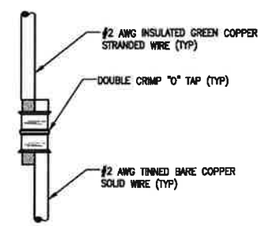
TYP. GROUND BAR CONNECTION

SCALE: N.T.S. — 10 / E05



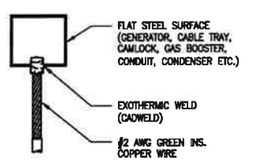
TYP. EQUIPMENT GROUND CONNECTION

SCALE: N.T.S. — 11 / E05



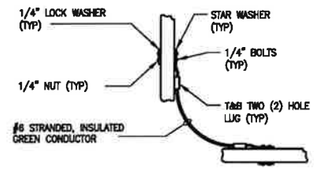
TYP. GROUND CONNECTION SPLICE

SCALE: N.T.S. — 12 / E05



TYP. CADWELD #2 GREEN TO FLAT STEEL SURFACE

SCALE: N.T.S. — 13 / E05



CABLE TRAY GROUNDING

SCALE: N.T.S. — 14 / E05

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492
(203) 741-7338

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SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
3/20/2023

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/20/23	CONSTRUCTION REVISED	CMC
2	03/13/23	CONSTRUCTION REVISED	CMC
1	01/19/23	ISSUED FOR CONSTRUCTION	CMC
0	01/09/23	ISSUED FOR REVIEW	CMC

PROJECT NAME & ADDRESS

SALEM NORTH CT

160 WITCH MEADOW ROAD
SALEM, CT 06420

VZW LOCATION CODE: 768831

MDG LOCATION ID: 8000916738

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

E05

22136.001

ATTACHMENT 4

NHH-65B-R2B

6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- Separate RS-485 RET input/output for low and high band
- One RET for low band and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Grounding Type	RF connector body grounded to reflector and mounting bracket
Performance Note	Outdoor usage | Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
Radome Material	Fiberglass, UV resistant
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	2
RF Connector Quantity, total	6

Remote Electrical Tilt (RET) Information

RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male
Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 3
Internal RET	High band (1) | Low band (1)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	13 W

NHH-65B-R2B

Protocol	3GPP/AISG 2.0 (Single RET)

Dimensions

Width	301 mm | 11.85 in
Depth	180 mm | 7.087 in
Length	1828 mm | 71.969 in
Net Weight, without mounting kit	19.8 kg | 43.651 lb

Array Layout

NHH

Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	ANxxxxxxxxxxxxxx1
Y1	1695-2360	3-4	2	ANxxxxxxxxxxxxxx2
Y2	1695-2360	5-6		

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz

NHH-65B-R2B

Polarization	±45°
Total Input Power, maximum	900 W @ 50 °C

Electrical Specifications

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain, dBi	14.9	15	17.7	17.9	18.4	18.7
Beamwidth, Horizontal, degrees	65	60	71	69	64	57
Beamwidth, Vertical, degrees	12.4	11.2	5.7	5.2	4.9	4.6
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	13	14	18	18	19	18
Front-to-Back Ratio at 180°, dB	30	29	31	30	29	31
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	30	30	30	30
VSWR | Return loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	300	300	300	300	300	300

Electrical Specifications, BASTA

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain by all Beam Tilts, average, dBi	14.5	14.5	17.3	17.7	18.1	18.5
Gain by all Beam Tilts Tolerance, dB	±0.6	±1.1	±0.4	±0.4	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.4 7 ° | 14.6 14 ° | 14.3	0 ° | 14.7 7 ° | 14.7 14 ° | 14.1	0 ° | 17.2 4 ° | 17.3 7 ° | 17.3	0 ° | 17.6 4 ° | 17.7 7 ° | 17.7	0 ° | 18.0 4 ° | 18.2 7 ° | 18.1	0 ° | 18.3 4 ° | 18.5 7 ° | 18.6
Beamwidth, Horizontal Tolerance, degrees	±2	±2.1	±3	±4.1	±6.5	±2.9
Beamwidth, Vertical Tolerance, degrees	±0.7	±0.7	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	13	14	16	16	17	15
Front-to-Back Total Power at 180° ± 30°, dB	23	22	27	27	25	25
CPR at Boresight, dB	22	21	23	23	22	19

NHH-65B-R2B

CPR at Sector, dB	10	7	16	13	11	4

Mechanical Specifications

Effective Projective Area (EPA), frontal	0.26 m² | 2.799 ft²
Effective Projective Area (EPA), lateral	0.22 m² | 2.368 ft²
Wind Loading @ Velocity, frontal	278.0 N @ 150 km/h (62.5 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	230.0 N @ 150 km/h (51.7 lbf @ 150 km/h)
Wind Loading @ Velocity, maximum	537.0 N @ 150 km/h (120.7 lbf @ 150 km/h)
Wind Loading @ Velocity, rear	282.0 N @ 150 km/h (63.4 lbf @ 150 km/h)
Wind Speed, maximum	241 km/h | 149.75 mph

Packaging and Weights

Width, packed	409 mm | 16.102 in
Depth, packed	299 mm | 11.772 in
Length, packed	1952 mm | 76.85 in
Weight, gross	32.3 kg | 71.209 lb

Regulatory Compliance/Certifications

Agency	**Classification**
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant

Included Products

BSAMNT-3	Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

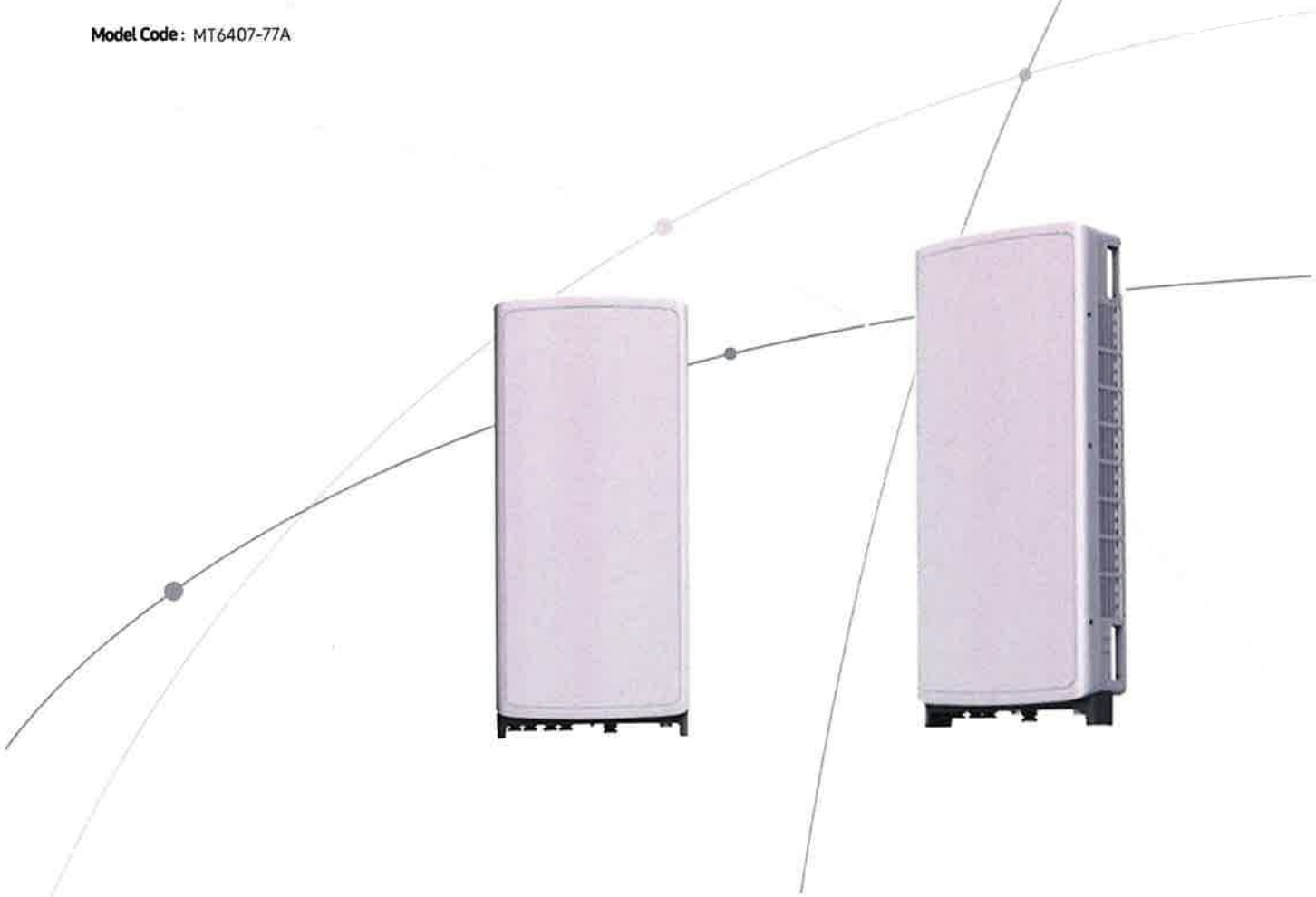
SAMSUNG

SAMSUNG C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A

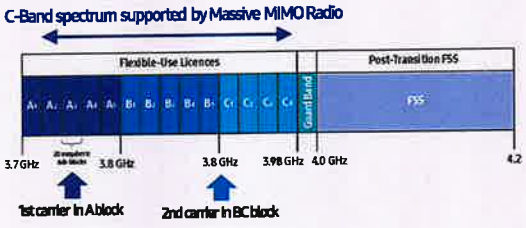


Points of Differentiation

Wide Bandwidth

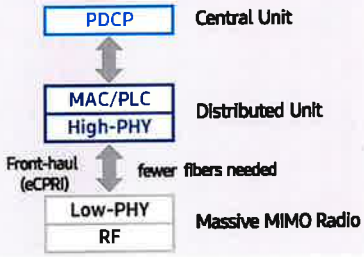
With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.
It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO(Multi-user MIMO) , it enables to increase user throughput by minimizing interference.

Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment..

Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs

SAMSUNG

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

SAMSUNG

AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code	RF4439d-25A

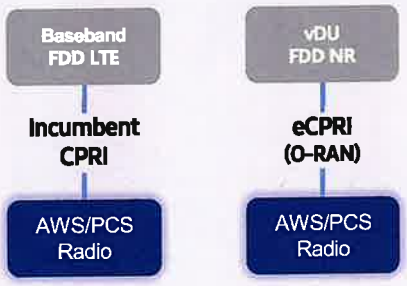
Homepage
samsungnetworks.com

Youtube
www.youtube.com/samsung5g

Points of Differentiation

Continuous Migration

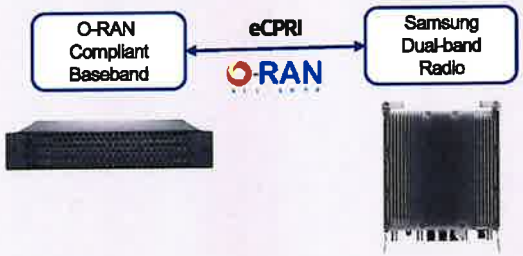
Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



O-RAN Compliant

A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

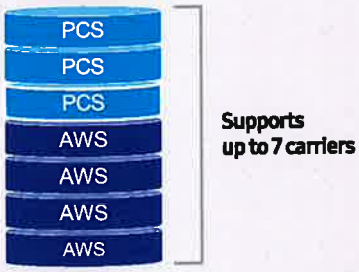
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



Optimum Spectrum Utilization

The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.

- **2 FH connectivity**
- **O-RAN capability**
- **More carriers and spectrum**

Same as an incumbent radio volume

Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/ Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb

SAMSUNG

700/850MHZ MACRO RADIO

DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This 700/850MHz 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code	RF4440d-13A

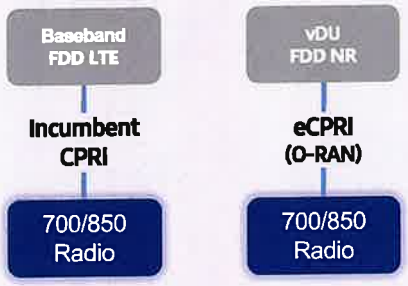
Homepage
samsungnetworks.com

Youtube
www.youtube.com/samsung5g

Points of Differentiation

Continuous Migration

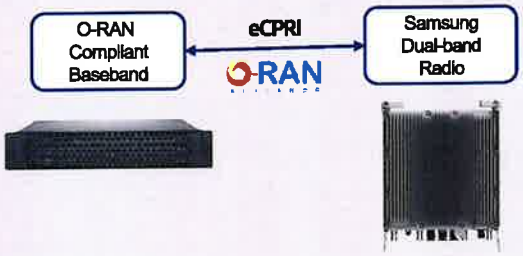
Samsung's 700/850MHz macro radio can support each incumbent CPRI interface as well as an advanced eCPRI interface. This feature provides installable options for both legacy LTE networks and added NR networks.



O-RAN Compliant

A standardized O-RAN radio can help when implementing cost-effective networks because it is capable of sending more data without compromising additional investments.

Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



Optimum Spectrum Utilization

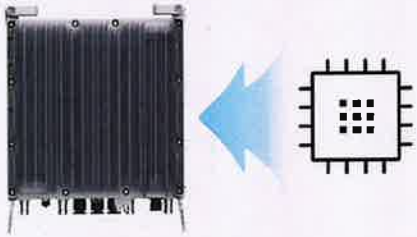
The number of required carriers varies according to site (region). The ability to support many carriers is essential for using all frequencies that the operator has available.

The new 700/850MHz dual-band radio can support up to 2 carriers in the B13 (700MHz) band and 3 carriers in the B5 (850MHz) band, respectively.

Secured Integrity

Access to sensitive data is allowed only to authorized software.

The Samsung radio's CPU can protect root of trust, which is credential information to verify SW integrity, and secure storage provides access control to sensitive data by using dedicated hardware (TPM).



Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B13(700MHz), B5(850MHz)
Frequency Band	DL: 746 – 756MHz, UL: 777 – 787MHz DL: 869 – 894MHz, UL: 824 – 849MHz
RF Power	(B13) 4 × 40W or 2 × 60W (B5) 4 × 40W or 2 × 60W
IBW/OBW	(B13) 10MHz / 10MHz (B5) 25MHz / 25MHz
Installation	Pole, Wall
Size/ Weight	14.96 x 14.96 x 9.05inch (33.2L) / 70.33 lb

SD050 | 3.4L | 50 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

Standby Power Rating
50 kW, 63 kVA, 60 Hz

Prime Power Rating*
45 kW, 56 kVA, 60 Hz

*EPA Certified Prime ratings are not available in the US or its Territories

Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

UL2200, UL6200, UL1236, UL142

CSA C22.2

BS5514 and DIN 6271

SAE J1349

NFPA 37, 70, 99, 110

NEC700, 701, 702, 708

ISO 3046, 7637, 8528, 9001

NEMA ICS10, MG1, 250, ICS6, AB1

ANSI C62.41

IBC 2009, CBC 2010, IBC 2012, ASCE 7-05, ASCE 7-10, ICC-ES AC-156 (2012)

Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SD050 | 3.4L | 50 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer (Enclosed Units Only)

Fuel System

- Fuel Lockoff Solenoid
- Primary Fuel Filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze
- 120 VAC Coolant Heater

Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- 12 Leads (3-Phase, Non 600V)
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Auxiliary Voltage Regulator Power Winding
- Brushless Excitation
- Sealed Bearing
- Automated Manufacturing (Winding, Insertion, Lacing, Varnishing)
- Rotor Dynamically Spin Balanced
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Only)
- Silencer of Heat Shield

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

FUEL TANKS (If Selected)

- UL 142/ULC S-601
- Double Wall Construction
- Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested - 2 psi
- Rupture Basin Alarm
- Fuel Level
- Check Valve In Supply and Return Lines
- RhinoCoat™- Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

CONTROL SYSTEM

Digital H Control Panel- Dual 4x20 Display

Program Functions

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- All Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

Full System Status Display

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency

Alarms and Warnings

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Overspeed
- Battery Voltage
- Alarms and Warnings Time and Date Stamped
- Snap Shots of Key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

SD050 | 3.4L | 50 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Engine Coolant Heater
- Oil Heater
- Industrial Silencer (Open Set)
- Air Filter Restriction Indicator
- Fan and Belt Guards (Enclosed Units Only)

FUEL SYSTEM

- Flexible Fuel Lines
- Primary Fuel Filter

ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating
- Permanent Magnet Excitation

GENERATOR SET

- 8 Position Load Center

CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch
- Pad Vibration Isolator
- Enclosure Heater

WARRANTY (Standby Gensets Only)

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

CONTROL SYSTEM

- NFPA 110 Compliant 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Sender with Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- Remote Communication - Modem
- 10A Engine Run Relay
- Ground Fault Indication and Protection Functions
- 100 dB Alarm Horn
- 120V GFCI and 240V Outlets

FUEL TANKS (Size On Last Page)

- 8 in (203.2 mm) Fill Extension
- 13 in (330.2 mm) Fill Extension
- 19 in (482.6 mm) Fill Extension
- Overfill Protection Valve
- Vent Extensions
- Tank Risers
- Fuel Drop Tube
- Return Hose
- 90% Fuel Level Alarm

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pan

CONTROL SYSTEM

- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

ALTERNATOR SYSTEM

- 3rd Breaker System

GENERATOR SET

- Special Testing
- IBC Seismic Certification

TANKS

- UL2085 Tank
- Stainless Steel Tanks

SD050 | 3.4L | 50 kW

INDUSTRIAL DIESEL GENERATOR SET

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APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emission Data Sheet
Cylinder #	4
Type	In-Line
Displacement - in^3 (L)	207.48 (3.4)
Bore - in (mm)	3.86 (98)
Stroke - in (mm)	4.45 (113)
Compression Ratio	18.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head	Cast Iron OHV
Piston Type	Aluminum
Crankshaft Type	Forged Steel

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow Cartridge
Crankcase Capacity - qt (L)	7.4 (7)

Cooling System

Cooling System Type	Closed Recovery
Water Pump Type	Pre-Lubed, Self Sealing
Fan Type	Pusher
Fan Speed - rpm	2,250
Fan Diameter - in (mm)	560 (22)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel #2
Fuel Specifications	ASTM
Fuel Filtering (microns)	10
Fuel Inject Pump	Bosch (VE)
Fuel Pump Type	Engine Driven Gear
Injector Type	Pintel - 2,100 psi (14,479 kPa)
Fuel Supply Line - in (mm)	0.312 (7.92) NPT
Fuel Return Line - in (mm)	0.312 (7.92) NPT

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	K0050124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5% (3-Phase)
Telephone Interference Factor (TIF)	< 50
Standard Excitation	Synchronous Brushless
Bearings	Single Sealed Cartridge
Coupling	Direct via Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.25%

SD050 | 3.4L | 50 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

OPERATING DATA

POWER RATINGS

		Standby
Single-Phase 120/240 VAC @1.0pf	50 kW	Amps: 208
Three-Phase 120/208 VAC @0.8pf	50 kW	Amps: 173
Three-Phase 120/240 VAC @0.8pf	50 kW	Amps: 150
Three-Phase 277/480 VAC @0.8pf	50 kW	Amps: 75
Three-Phase 346/600 VAC @0.8pf	50 kW	Amps: 60

MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip

277/480 VAC	30%	208/240 VAC	30%
K0050124Y21	98	K0050124Y21	75
K0060124Y21	124	K0060124Y21	95

FUEL CONSUMPTION RATES*

Fuel Pump Lift - ft (m)
3 (1)

Total Fuel Pump Flow (Combustion + Return) - gph (Lph)
3.6 (13.5)

Diesel - gph (Lph)

Percent Load	Standby
25%	1.3 (4.9)
50%	2.3 (8.7)
75%	3.3 (12.5)
100%	4.3 (16.4)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Coolant Flow	gpm (Lpm)	12.2 (46)
Coolant System Capacity	gal (L)	2.5 (9.5)
Heat Rejection to Coolant	BTU/hr (kW)	135,900 (39.8)
Inlet Air	scfm (m^3/hr)	7,500 (212)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Ambient Temperature (Before Derate)	See Bulletin No. 0199280SSD	
Maximum Radiator Backpressure	in H_2O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power - scfm (m^3/min)	166 (4.7)

ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	86
Piston Speed	ft/min (m/min)	1,335 (406.9)
BMEP	psi (kPa)	169 (1,165)

EXHAUST

		Standby
Exhaust Flow (Rated Output)	scfm (m^3/min)	448 (12.7)
Max. Allowable Backpressure	inHg (kPa)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	1,044 (562)

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.
Standby - See Bulletin 0187500SSB
Prime - See Bulletin 0187510SSB

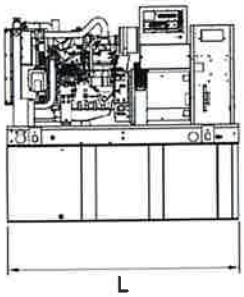
SD050 | 3.4L | 50 kW

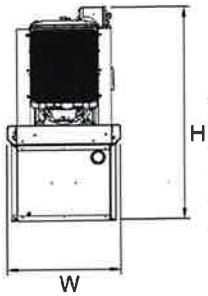
INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

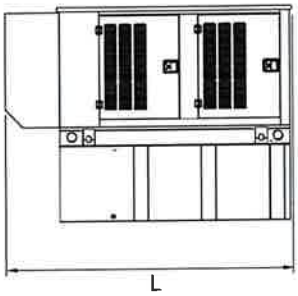
DIMENSIONS AND WEIGHTS*

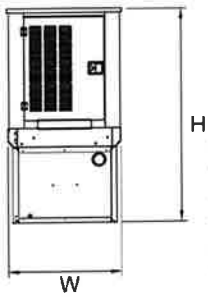




OPEN SET (Includes Exhaust Flex)

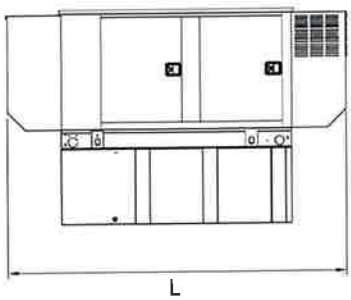
Run Time Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Minimum Weight - lbs (kg)	Maximum Weight - lbs (kg)
No Tank	-	76.7 (1,948) x 37.4 (950) x 45.2 (1,147)	1,710 (776)	1,836 (833)
12	54 (204)	76.7 (1,948) x 37.4 (950) x 58.2 (1,477)	2,190 (993)	2,316 (932)
30	132 (499)	76.7 (1,948) x 37.4 (950) x 70.2 (1,782)	2,420 (1,098)	2,546 (979)
44	190 (719)	76.7 (1,948) x 37.4 (950) x 82.2 (2,087)	2,629 (1,192)	2,755 (1,022)
49	211 (799)	106.0 (2,692) x 37.4 (950) x 71.2 (1,807)	2,634 (1,192)	2,760 (1,023)
69	300 (1,136)	92.9 (2,360) x 37.4 (950) x 85.7 (2,176)	2,692 (1,221)	2,818 (1,035)

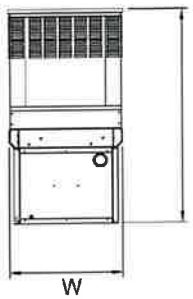




WEATHER PROTECTED ENCLOSURE

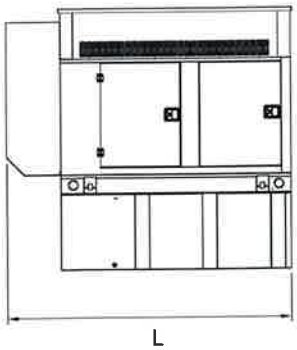
Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Steel Weight Minimum - lbs (kg)	Steel Weight Maximum - lbs (kg)	Aluminum Weight Minimum - lbs (kg)	Aluminum Weight Maximum - lbs (kg)
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	2,158 (979)	2,286 (1,037)	1,935 (878)	2,965 (1,345)
12	54 (204)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)	2,638 (1,197)	2,766 (1,255)	2,415 (1,096)	3,445 (1,563)
30	132 (499)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)	2,868 (1,301)	2,996 (1,359)	2,645 (1,200)	3,675 (1,667)
44	190 (719)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)	3,077 (1,396)	3,205 (1,454)	2,854 (1,295)	3,884 (1,762)
49	211 (799)	106.0 (2,692) x 38.0 (965) x 99.0 (2,516)	4,316 (1,958)	4,572 (2,074)	3,870 (1,755)	5,930 (2,690)
69	300 (1,136)	94.8 (2,409) x 38.0 (965) x 90.0 (2,287)	3,140 (1,424)	3,268 (1,482)	2,917 (1,323)	3,947 (1,790)

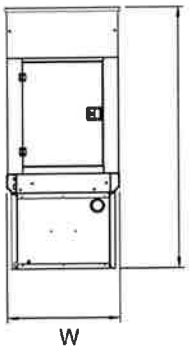




LEVEL 1 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Steel Weight Minimum - lbs (kg)	Steel Weight Maximum - lbs (kg)	Aluminum Weight Minimum - lbs (kg)	Aluminum Weight Maximum - lbs (kg)
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	2,158 (979)	2,286 (1,037)	1,935 (878)	2,965 (1,345)
12	54 (204)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)	2,638 (1,197)	2,766 (1,255)	2,415 (1,096)	3,445 (1,563)
30	132 (499)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)	2,868 (1,301)	2,996 (1,359)	2,645 (1,200)	3,675 (1,667)
44	190 (719)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)	3,077 (1,396)	3,205 (1,454)	2,854 (1,295)	3,884 (1,762)
49	211 (799)	106.0 (2,692) x 38.0 (965) x 99.0 (2,516)	4,316 (1,958)	4,572 (2,074)	3,870 (1,755)	5,930 (2,690)
69	300 (1,136)	94.8 (2,409) x 38.0 (965) x 90.0 (2,287)	3,140 (1,424)	3,268 (1,482)	2,917 (1,323)	3,947 (1,790)





LEVEL 2 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Steel Weight Minimum - lbs (kg)	Steel Weight Maximum - lbs (kg)	Aluminum Weight Minimum - lbs (kg)	Aluminum Weight Maximum - lbs (kg)
No Tank	-	94.8 (2,409) x 38 (965) x 70.1 (1,780)	2,389 (1,084)	2,517 (1,142)	2,035 (923)	2,163 (981)
12	54 (204)	94.8 (2,409) x 38 (965) x 62.5 (1,588)	2,638 (1,197)	2,766 (1,255)	2,415 (1,095)	3,445 (1,563)
30	132 (499)	94.8 (2,409) x 38 (965) x 74.5 (1,893)	2,868 (1,301)	2,996 (1,359)	2,645 (1,200)	3,675 (1,667)
44	190 (719)	94.8 (2,409) x 38 (965) x 86.5 (2,198)	3,077 (1,396)	3,205 (1,454)	2,854 (1,295)	3,884 (1,762)
49	211 (799)	106.0 (2,692) x 38 (965) x 99 (2,516)	4,316 (1,958)	4,572 (2,074)	3,870 (1,755)	5,930 (2,690)
69	300 (1,136)	94.8 (2,409) x 38 (965) x 110.6 (2,809)	3,371 (1,529)	3,499 (1,587)	3,017 (1,368)	3,145 (1,427)

* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

SPEC SHEET

Generac Power Systems, Inc. | P.O. Box 8 | Waukesha, WI 53189
P: (262) 544-4811

Part No 0K5090
Rev. D 08/16/19

ATTACHMENT 5

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 195 ft Nudd Corporation Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT01916-S
Customer Site Name: North Salem
Carrier Name: Verizon (App#: 217919, V#8)
Carrier Site ID / Name: 5000916739 / Salem North_CT
Site Location: 160 Witch Meadow Road
Salem, Connecticut
New London County
Latitude: 41.502828
Longitude: -72.297052

Analysis Result:

Max Structural Usage: 98.9% [Pass]
Max Foundation Usage: 42.0% [Pass]
Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Wei-Hsiang Chen

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 195 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01916-S

Customer Site Name: North Salem

Carrier Name: Verizon (App#: 217919, V#8)

Carrier Site ID / Name: 5000916739 / Salem North_CT

Site Location: 160 Witch Meadow Road

Salem, Connecticut

New London County

Latitude: 41.502828

Longitude: -72.297052

Analysis Result:

Max Structural Usage: 98.9% [Pass]

Max Foundation Usage: 42.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Wei-Hsiang Chen

Introduction

The purpose of this report is to summarize the analysis results on the 195 ft Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Nudd Corporation, Project #7014 dated February 2, 2000
Foundation Drawing	Nudd Corporation, Project #7014 dated February 2, 2000
Geotechnical Report	FDH Engineering, Project #1207124EG1 dated August 10, 2012
Modification Drawings	Semaan Engineering, Project #CT-01916 dated May 6, 2002 FDH Engineering, Inc., Project #13SBAH1400 dated September 25, 2013 TES, PCI, Job# 93520, Dated 06/29/20
Mount Analysis	TES Job # 139516 Rev1, Dated 03/28/2023

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	123.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.206, S_1 = 0.055

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	195.0	3	RFS APXVTM14-C-I20 - Panel	Platform w/ Handrail Site Pro Modification Kits: (1) HRK-14 (1) PRK-SFS-H-L (1) PRK-1245L	(4) 1-1/4" Fiber	Sprint Nextel
2		3	Commscope NNVV-65B-R4 - Panel			
3		3	ALU 1900 Mhz - RRU			
4		6	ALU 800 Mhz - RRU			
5		3	ALU TD-RRH8x20-25 - RRU			
6	185.0	3	Powerwave 7770 - Panel	(3) Modified Sector Frame [(3) SitePro 1 SFS-L w/ handrail kit] (3) SitePro 1 HRK14-3HD (3) SitePro 1 PRK-SFS-L (3) Horizontal Pipe (6) Pipe Mast	(12) 1 1/4" (4) 2" Conduit * (1) 1/2"	AT&T
7		3	Ericsson 4449 B5/B12 RRU			
8		6	Powerwave LGP21401 TMA			
9		6	Powerwave LGP21903 Diplexer			
10		6	Cci DMP65R-BU8DA - Panel			
11		3	Ericsson RRUS 4478 B14 RRU			
12		3	Ericsson RRUS 8843 B2 B66A RRU			
13		1	Raycap DC6-48-60-18-8F SP			
14		1	Raycap DC6-48-60-18-8C SP			
15		1	Raycap DC6-48-60-0-8C-EV SP			
16	175.0	3	RFS APX16DWV-16DWVS-E-A20 - Panel	Modified Low Profile Platform w/ Add Support Rail with End Connection Kit (MS-HRECP-35)	(2) 1 5/8" Hybrid (1) 1-1/4" Hybrid	T-Mobile
17		3	RFS APXVAALL24_43-U-NA20 - Panel			
18		3	Ericsson 4449 B71 + B85			
19		6	Ericsson RRUS11 B2			
20		3	Ericsson RRUS11 B4			
21		3	Commscope LNX-6515DS-A1M - Panel			

* (1) 2" Conduit housing (2) 3/4" DC Power & (1) 1/2" Fiber cables.
(1) 2" Conduit housing (1) 1/2" Fiber cable.
(2) 2" Conduits housing (4) 3/4" DC Power cables.

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
22	165.0	15	Commscope NHH-65B-R2B - Panel	Platform w/ Handrail (SitePro1 RMQLP-4096-HK) + (3) Commscope BSAMNT-SBS-1-2]	(12) 1 5/8"	Verizon
23		6	Samsung MT6407-77A - Panel			
24		12	Samsung B2/B66A RRH-BR049 (RFV01U-D1A) - RRU			
25		12	Samsung B5/B13 RRH-BR04C (RFV01U-D2A) - RRU			
26		9	Raycap RVZDC-6627-PF-48 - OVP			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**98.9%**	**70.0%**	**97.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	6548.6	43.7	74.3

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 2.0197 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

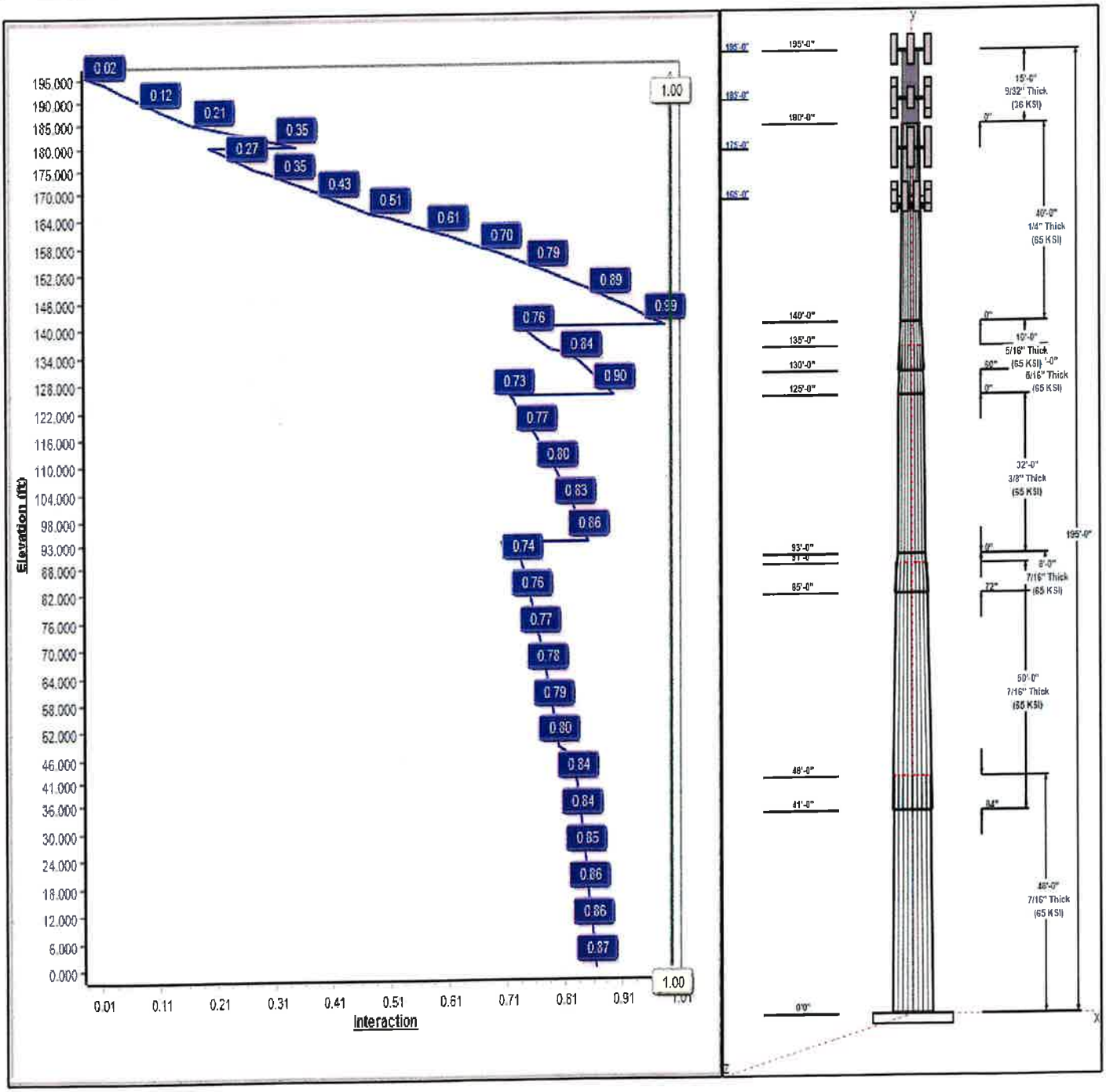
Usage Diagram - Max Ratio 98.91% at 140.0ft

Structure:	CT01916-S-SBA	**Code:**	EIA/TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Gh:**	1.1	Page: 1	
Base Elev:	0.000 (ft)				

TES Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	32
Wind Load Factor:	1.00		

Load Case : 1.2D + 1.0W 123 mph Wind

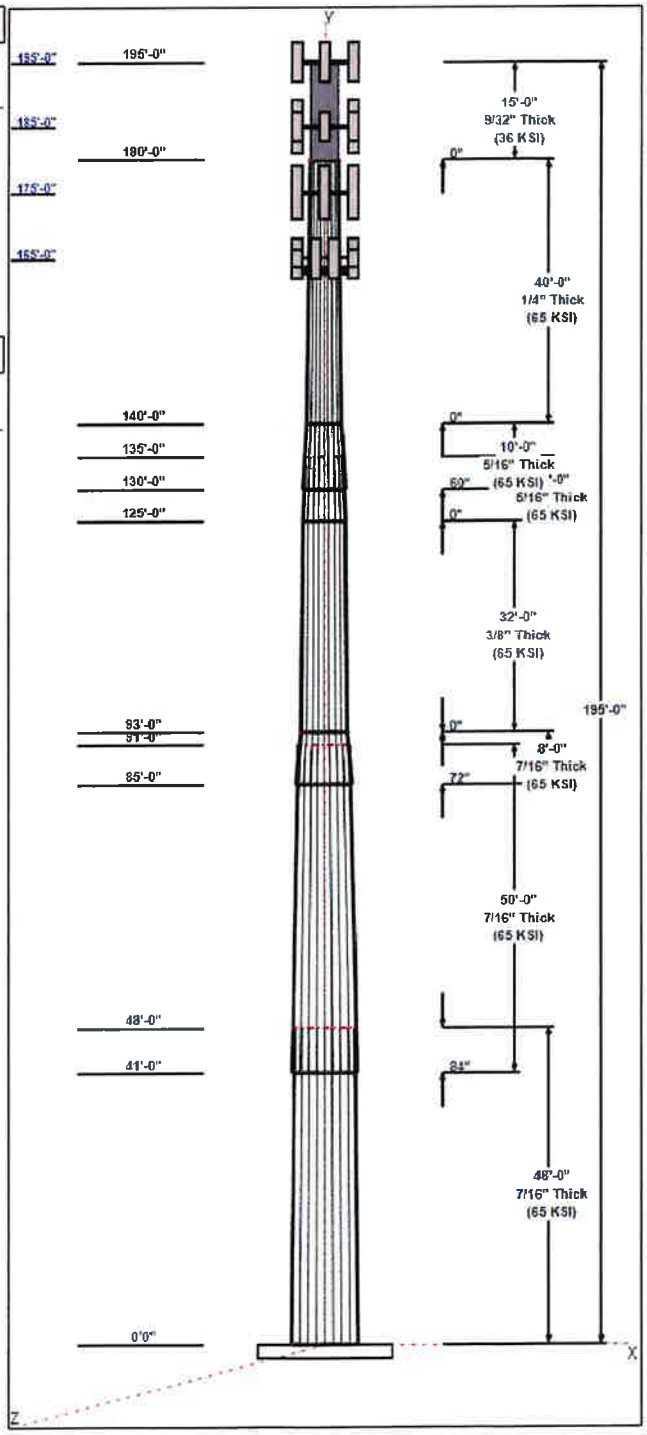


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	53.07	64.50	0.438		0.23819	65
2	50.00	43.70	55.61	0.438	Slip	0.23819	65
3	8.00	44.10	46.00	0.438	Slip	0.23819	65
4	32.00	36.48	44.10	0.375	Butt	0.23819	65
5	10.00	34.09	36.48	0.313	Butt	0.23819	65
6	10.00	33.53	35.91	0.313	Slip	0.23819	65
7	40.00	24.00	33.53	0.250	Butt	0.23819	65
8	15.00	24.00	24.00	0.281	Butt	0.00000	36

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
195.00	195.00	1	Low Profile	Sprint Nextel
195.00	195.00	1	PRK-1245 (kicker kit)	Sprint Nextel
195.00	195.00	1	(3) SFS-H-L (V-Braces)	Sprint Nextel
195.00	195.00	1	HRK12 (Handrail Kit)	Sprint Nextel
195.00	195.00	3	APXVTM14-C-I20	Sprint Nextel
195.00	195.00	3	NNVV-65B-R4	Sprint Nextel
195.00	195.00	3	1900MHz RRH (65MHz)	Sprint Nextel
195.00	195.00	6	800 MHz RRH	Sprint Nextel
195.00	195.00	3	TD-RRH8x20-25	Sprint Nextel
185.00	185.00	1	Raycap DC6-48-60-18-8C	AT&T
185.00	185.00	1	Raycap	AT&T
185.00	185.00	3	Powerwave 7770	AT&T
185.00	185.00	3	Ericsson 4449 B5/B12	AT&T
185.00	185.00	6	Powerwave LGP21401	AT&T
185.00	185.00	6	Powerwave LGP21903	AT&T
185.00	185.00	1	Sector Frames	AT&T
185.00	185.00	6	Cci DMP65R-BU8DA	AT&T
185.00	185.00	1	(3) SitePro 1 PRK-SFS-L &	AT&T
185.00	185.00	1	(3) SitePro 1 SFS-L with	AT&T
185.00	185.00	1	(3) SitePro 1 HRK14-3HD	AT&T
185.00	185.00	3	Ericsson RRUS 4478 B14	AT&T
185.00	185.00	3	Ericsson RRUS 8843 B2	AT&T
185.00	185.00	1	Raycap DC6-48-60-18-8F	AT&T
175.00	175.00	3	RFS	T-Mobile
175.00	175.00	3	RFS	T-Mobile
175.00	175.00	3	Commscope	T-Mobile
175.00	175.00	3	Ericsson 4449 B71 + B85	T-Mobile
175.00	175.00	1	Platform w/ Hand Rail	T-Mobile
175.00	175.00	6	Ericsson RRUS11 B2	T-Mobile
175.00	175.00	3	Ericsson RRUS11 B4	T-Mobile
165.00	165.00	15	Commscope	Verizon
165.00	165.00	6	Samsung MT6407-77A	Verizon
165.00	165.00	12	B2/B66A RRH-BR049	Verizon
165.00	165.00	12	B5/B13 RRH-BR04C	Verizon
165.00	165.00	9	Raycap	Verizon
165.00	165.00	1	RMQLP-4096-HK Plat. +	Verizon
165.00	165.00	3	BSAMNT-SBS-1-2	Verizon



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	195.00	Inside	1-1/4" Fiber	Sprint

0.00	185.00	Inside	1 1/4" Coax	AT&T
0.00	185.00	Inside	1/2" Coax	AT&T
0.00	185.00	Inside	1/2" Fiber	AT&T
0.00	185.00	Inside	2" Conduit	AT&T
0.00	185.00	Inside	3/4" DC	AT&T
177.75	182.25	Outside	(3) Bypass Stiffeners	
0.00	175.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	175.00	Inside	1.9" Fiber	T-Mobile
0.00	165.00	Inside	1 5/8" Coax	Verizon
0.00	143.00	Outside	(4) C6x10.5	
0.00	55.00	Outside	(4) C5x9	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
29	2.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	64.5	50.0	Round

Reactions

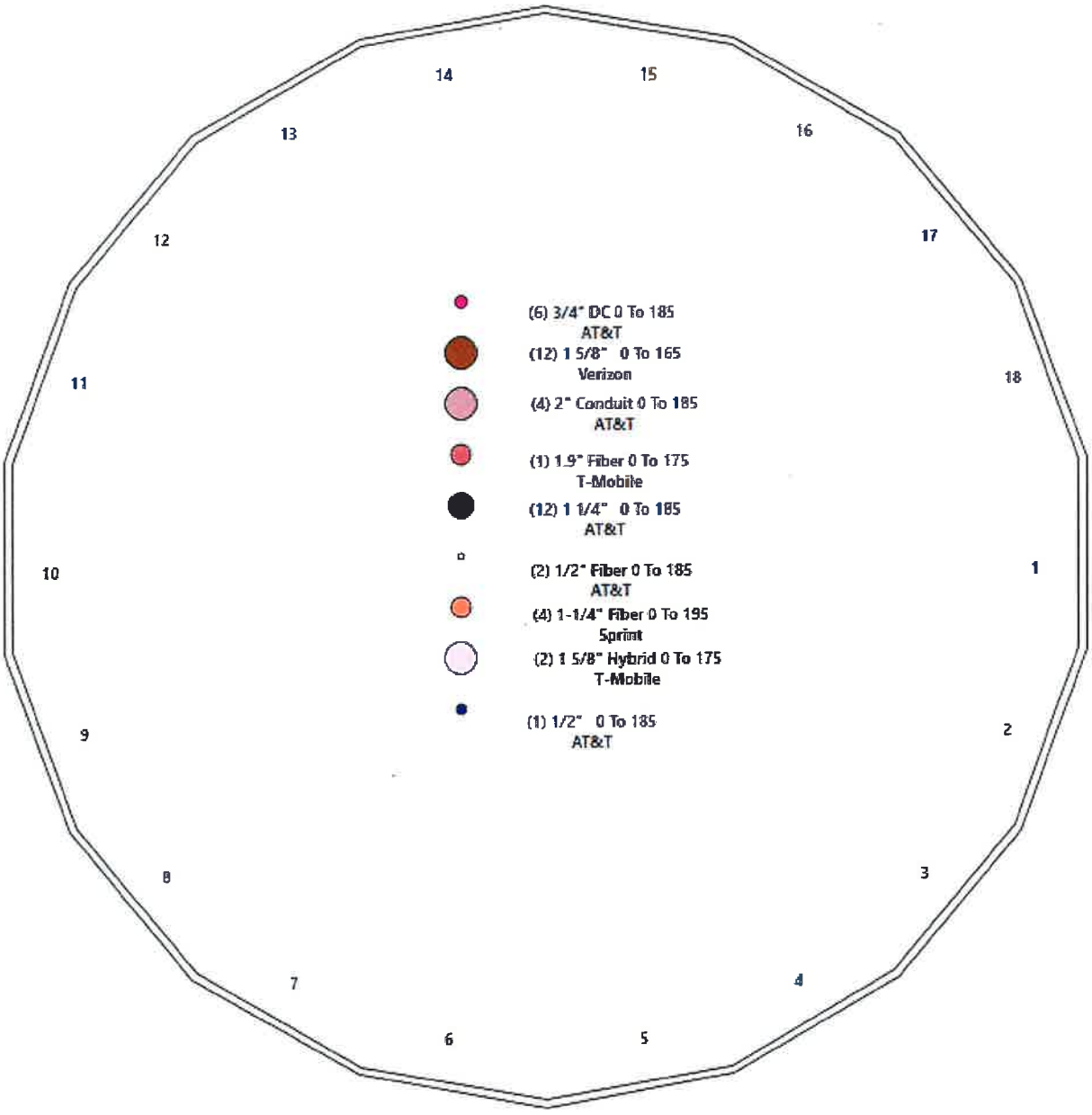
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 123 mph Wind	6548.6	43.7	74.3
0.9D + 1.0W 123 mph Wind	6419.2	43.7	55.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1624.0	10.7	101.6
1.2D + 1.0Ev + 1.0Eh	151.5	0.8	77.1
0.9D + 1.0Ev + 1.0Eh	148.5	0.8	58.4
1.0D + 1.0W 60 mph Wind	1380.9	9.3	61.9

Structure: CT01916-S-SBA - Coax Line Placement

Type: Monopole
Site Name: North Salem
Height: 195.00 (ft)

4/4/2023

Tower Engineering Solutions



Shaft Properties

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 5	

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.4375	65		0.00	13,233
2	18	50.000	0.4375	65	Slip	84.00	11,627
3	18	8.000	0.4375	65	Slip	72.00	1,686
4	18	32.000	0.3750	65	Flange	0.00	5,173
5	18	10.000	0.3125	65	Flange	0.00	1,180
6	18	10.000	0.3125	65	Slip	60.00	1,161
7	18	40.000	0.2500	65	Flange	0.00	3,080
8	R	15.000	0.2810	36	Flange	0.00	1,069
					Total Shaft Weight:		**38,209**

	Bottom						Top						
Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	64.50	0.00	88.96	46124.76	24.59	147.43	53.07	48.00	73.08	25574.1	19.98	121.3	0.238194
2	55.61	41.00	76.61	29462.36	21.00	127.11	43.70	91.00	60.07	14204.8	16.20	99.88	0.238194
3	46.00	85.00	63.27	16597.56	17.13	105.15	44.10	93.00	60.63	14601.1	16.36	100.8	0.238194
4	44.10	93.00	52.04	12569.07	19.32	117.59	36.48	125.00	42.97	7074.93	15.74	97.27	0.238194
5	36.48	125.0	35.87	5926.45	19.17	116.72	34.09	135.00	33.51	4830.83	17.83	109.1	0.238194
6	35.91	130.0	35.31	5652.53	18.85	114.91	33.53	140.00	32.94	4592.07	17.51	107.2	0.238194
7	33.53	140.0	26.40	3694.43	22.24	134.11	24.00	180.00	18.84	1343.00	15.52	96.00	0.238194
8	24.00	180.0	20.94	1473.63	0.00	85.41	24.00	195.00	20.94	1473.63	0.00	85.41	0.000000

Load Summary

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	195.00	Low Profile Platform-Round	1	1800.00	26.00	1.00	2874.97	40.285	1.00	0.00	0.00
2	195.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	687.03	16.308	1.00	0.00	0.00
3	195.00	(3) SFS-H-L (V-Braces)	1	230.00	6.70	1.00	449.77	11.502	1.00	0.00	0.00
4	195.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	474.29	11.265	1.00	0.00	0.00
5	195.00	APXVTM14-C-I20	3	56.20	6.34	0.78	159.07	7.086	0.81	0.00	0.00
6	195.00	NNVV-65B-R4	3	77.40	12.27	0.73	272.83	13.267	0.76	0.00	0.00
7	195.00	1900MHz RRH (65MHz)	3	60.00	2.77	0.50	117.10	3.638	0.50	0.00	0.00
8	195.00	800 MHz RRH	6	53.00	2.49	0.50	103.62	3.273	0.50	0.00	0.00
9	195.00	TD-RRH8x20-25	3	70.00	4.05	0.50	140.71	4.592	0.50	0.00	0.00
10	185.00	Raycap DC6-48-60-18-8C	1	20.00	1.26	0.50	55.92	1.709	0.50	0.00	0.00
11	185.00	Raycap DC6-48-60-0-8C-EV	1	16.00	4.78	0.50	100.24	5.382	0.50	0.00	0.00
12	185.00	Powerwave 7770	3	35.00	5.50	0.73	120.43	6.210	0.73	0.00	0.00
13	185.00	Ericsson 4449 B5/B12 RRU	3	71.00	1.97	0.50	107.34	2.343	0.50	0.00	0.00
14	185.00	Powerwave LGP21401 TMA	6	14.10	1.29	0.50	31.12	1.859	0.50	0.00	0.00
15	185.00	Powerwave LGP21903 Diplexer	6	5.50	0.27	0.50	11.24	0.541	0.50	0.00	0.00
16	185.00	Sector Frames	1	1500.00	22.00	1.00	2391.10	34.024	1.00	0.00	0.00
17	185.00	Cci DMP65R-BU8DA	6	96.00	17.87	0.73	341.43	19.094	0.73	0.00	0.00
18	185.00	(3) SitePro 1 PRK-SFS-L & (6) Pipe	1	230.00	6.70	1.00	448.62	11.476	1.00	0.00	0.00
19	185.00	(3) SitePro 1 SFS-L with handrail kit	1	514.00	10.00	1.00	929.28	16.654	1.00	0.00	0.00
20	185.00	(3) SitePro 1 HRK14-3HD & (3)	1	406.61	9.75	1.00	735.12	16.237	1.00	0.00	0.00
21	185.00	Ericsson RRUS 4478 B14 RRU	3	59.90	1.84	0.50	91.90	2.199	0.50	0.00	0.00
22	185.00	Ericsson RRUS 8843 B2 B66A	3	72.00	1.64	0.50	103.89	1.978	0.50	0.00	0.00
23	185.00	Raycap DC6-48-60-18-8F	1	31.80	0.92	0.50	73.89	1.218	0.50	0.00	0.00
24	175.00	RFS APX16DWV-16DWVS-E-A20	3	40.70	6.46	0.62	126.71	7.198	0.62	0.00	0.00
25	175.00	RFS APXVAALL24_43-U-NA20	3	122.80	20.24	0.70	394.22	21.511	0.70	0.00	0.00
26	175.00	Commscope LNX-6515DS-A1M	3	49.80	11.47	0.80	205.21	13.682	0.80	0.00	0.00
27	175.00	Ericsson 4449 B71 + B85	3	71.00	1.97	0.67	107.14	2.341	1.00	0.00	0.00
28	175.00	Platform w/ Hand Rail	1	1600.00	32.00	1.00	3021.64	50.905	1.00	0.00	0.00
29	175.00	Ericsson RRUS11 B2	6	50.60	2.52	0.50	104.61	3.229	0.50	0.00	0.00
30	175.00	Ericsson RRUS11 B4	3	50.60	2.52	0.50	104.61	3.229	0.50	0.00	0.00
31	165.00	Commscope NHH-65B-R2B	15	43.65	8.08	0.83	170.93	8.929	0.83	0.00	0.00
32	165.00	Samsung MT6407-77A	6	79.40	4.69	0.70	154.42	5.321	0.70	0.00	0.00
33	165.00	B2/B66A RRH-BR049	12	84.40	1.87	0.50	131.94	2.244	0.50	0.00	0.00
34	165.00	B5/B13 RRH-BR04C (RFV01U-D2A)	12	70.30	1.87	0.50	113.16	2.244	0.50	0.00	0.00
35	165.00	Raycap RVZDC-6627-PF-48	9	32.00	4.06	0.50	108.68	4.613	0.50	0.00	0.00
36	165.00	RMQLP-4096-HK Plat. + HR/Kicker	1	2810.05	51.70	1.00	4790.49	77.449	1.00	0.00	0.00
37	165.00	BSAMNT-SBS-1-2	3	25.60	0.00	0.75	37.63	0.000	0.75	0.00	0.00
		Totals:	**139**	**17,061.84**			**34,260.69**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	195.00	(4) 1-1/4" Fiber	0.00	Inside
0.00	185.00	(12) 1 1/4" Coax	0.00	Inside
0.00	185.00	(1) 1/2" Coax	0.00	Inside
0.00	185.00	(2) 1/2" Fiber	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	185.00	(4) 2" Conduit			0.00	Inside					
0.00	185.00	(6) 3/4" DC			0.00	Inside					
177.7	182.25	(3) (3) Bypass Stiffeners			12.60	Outside					
0.00	175.00	(2) 1 5/8" Hybrid			0.00	Inside					
0.00	175.00	(1) 1.9" Fiber			0.00	Inside					
0.00	165.00	(12) 1 5/8" Coax			0.00	Inside					
0.00	143.00	(4) (4) C6x10.5			4.00	Outside					
0.00	55.00	(4) (4) C5x9			3.78	Outside					

Shaft Section Properties

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Increment Length: 2 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	64.500	88.956	46124.8	24.59	147.43	72.5	1408.	0.0
2.00		0.4375	64.024	88.294	45103.4	24.39	146.34	72.7	1387.	603.1
4.00		0.4375	63.547	87.633	44097.2	24.20	145.25	72.9	1366.	598.6
6.00		0.4375	63.071	86.971	43106.1	24.01	144.16	73.2	1346.	594.1
8.00		0.4375	62.594	86.310	42130.0	23.82	143.07	73.4	1325.	589.6
10.00		0.4375	62.118	85.648	41168.7	23.63	141.98	73.6	1305.	585.1
12.00		0.4375	61.642	84.987	40222.2	23.43	140.90	73.8	1285.	580.6
14.00		0.4375	61.165	84.325	39290.2	23.24	139.81	74.1	1265.	576.1
16.00		0.4375	60.689	83.664	38372.8	23.05	138.72	74.3	1245.	571.6
18.00		0.4375	60.213	83.002	37469.8	22.86	137.63	74.5	1225.	567.1
20.00		0.4375	59.736	82.341	36581.0	22.67	136.54	74.7	1206.	562.6
22.00		0.4375	59.260	81.679	35706.5	22.47	135.45	75.0	1186.	558.1
24.00		0.4375	58.783	81.018	34845.9	22.28	134.36	75.2	1167.	553.6
26.00		0.4375	58.307	80.356	33999.3	22.09	133.27	75.4	1148.	549.1
28.00		0.4375	57.831	79.695	33166.6	21.90	132.18	75.6	1129.	544.6
30.00		0.4375	57.354	79.033	32347.5	21.71	131.10	75.9	1110.	540.1
32.00		0.4375	56.878	78.372	31542.0	21.51	130.01	76.1	1092.	535.6
34.00		0.4375	56.401	77.710	30750.1	21.32	128.92	76.3	1073.	531.1
36.00		0.4375	55.925	77.049	29971.5	21.13	127.83	76.5	1055.	526.6
38.00		0.4375	55.449	76.387	29206.1	20.94	126.74	76.8	1037.	522.1
40.00		0.4375	54.972	75.726	28453.9	20.75	125.65	77.0	1019.	517.6
41.00	Bot - Section 2	0.4375	54.734	75.395	28082.7	20.65	125.11	77.1	1010.	257.1
42.00		0.4375	54.496	75.064	27714.7	20.55	124.56	77.2	1001.	516.1
44.00		0.4375	54.019	74.403	26988.4	20.36	123.47	77.5	984.0	1025.5
46.00		0.4375	53.543	73.741	26275.0	20.17	122.38	77.7	966.5	1016.5
48.00	Top - Section 1	0.4375	53.942	74.295	26871.1	20.33	123.30	0.0	0.0	1007.5
50.00		0.4375	53.465	73.633	26159.7	20.14	122.21	77.7	963.7	503.4
52.00		0.4375	52.989	72.972	25461.0	19.95	121.12	77.9	946.4	498.9
54.00		0.4375	52.513	72.310	24774.8	19.75	120.03	78.2	929.2	494.4
56.00		0.4375	52.036	71.649	24101.1	19.56	118.94	78.4	912.2	489.9
58.00		0.4375	51.560	70.987	23439.7	19.37	117.85	78.6	895.4	485.4
60.00		0.4375	51.083	70.326	22790.5	19.18	116.76	78.8	878.7	480.9
62.00		0.4375	50.607	69.664	22153.4	18.99	115.67	79.1	862.2	476.4
64.00		0.4375	50.131	69.003	21528.3	18.79	114.58	79.3	845.8	471.9
66.00		0.4375	49.654	68.341	20915.1	18.60	113.50	79.5	829.6	467.3
68.00		0.4375	49.178	67.680	20313.6	18.41	112.41	79.7	813.6	462.8
70.00		0.4375	48.701	67.018	19723.7	18.22	111.32	80.0	797.7	458.3
72.00		0.4375	48.225	66.357	19145.4	18.03	110.23	80.2	781.9	453.8
74.00		0.4375	47.749	65.695	18578.6	17.83	109.14	80.4	766.4	449.3
76.00		0.4375	47.272	65.034	18023.0	17.64	108.05	80.7	750.9	444.8
78.00		0.4375	46.796	64.372	17478.6	17.45	106.96	80.9	735.7	440.3
80.00		0.4375	46.319	63.711	16945.2	17.26	105.87	81.1	720.6	435.8
82.00		0.4375	45.843	63.049	16422.9	17.07	104.78	81.3	705.6	431.3
84.00		0.4375	45.367	62.388	15911.4	16.87	103.70	81.6	690.8	426.8
85.00	Bot - Section 3	0.4375	45.128	62.057	15659.6	16.78	103.15	81.7	683.5	211.7
86.00		0.4375	44.890	61.726	15410.6	16.68	102.61	81.8	676.2	425.3
88.00		0.4375	44.414	61.065	14920.4	16.49	101.52	82.0	661.7	843.9
90.00		0.4375	43.938	60.403	14440.8	16.30	100.43	82.2	647.3	834.9
91.00	Top - Section 2	0.4375	44.574	61.287	15084.3	16.55	101.88	0.0	0.0	414.1
92.00		0.4375	44.336	60.957	14841.4	16.46	101.34	82.0	659.3	208.0

Increment Length: 2 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
93.00	Top - Section 3	0.4375	44.098	60.626	14601.1	16.36	100.80	82.2	652.2	206.9
93.00	Bot - Section 4	0.3750	44.098	52.039	12569.1	19.09	117.59	78.7	561.4	
94.00		0.3750	43.860	51.756	12364.8	19.21	116.96	78.8	555.3	176.6
96.00		0.3750	43.383	51.189	11962.8	18.99	115.69	79.1	543.1	350.3
98.00		0.3750	42.907	50.622	11569.7	18.76	114.42	79.3	531.1	346.4
100.00		0.3750	42.431	50.055	11185.3	18.54	113.15	79.6	519.2	342.6
102.00		0.3750	41.954	49.488	10809.4	18.32	111.88	79.9	507.5	338.7
104.00		0.3750	41.478	48.921	10442.1	18.09	110.61	80.1	495.9	334.9
106.00		0.3750	41.001	48.354	10083.2	17.87	109.34	80.4	484.4	331.0
108.00		0.3750	40.525	47.787	9732.7	17.64	108.07	80.6	473.0	327.1
110.00		0.3750	40.049	47.220	9390.3	17.42	106.80	80.9	461.8	323.3
112.00		0.3750	39.572	46.653	9056.1	17.20	105.53	81.2	450.7	319.4
114.00		0.3750	39.096	46.086	8729.9	16.97	104.26	81.4	439.8	315.6
116.00		0.3750	38.619	45.519	8411.6	16.75	102.99	81.7	429.0	311.7
118.00		0.3750	38.143	44.952	8101.2	16.52	101.71	82.0	418.3	307.9
120.00		0.3750	37.667	44.385	7798.5	16.30	100.44	82.2	407.8	304.0
122.00		0.3750	37.190	43.818	7503.4	16.08	99.17	82.5	397.4	300.1
124.00		0.3750	36.714	43.251	7215.9	15.85	97.90	82.5	387.1	296.3
125.00	Top - Section 4	0.3750	36.476	42.967	7074.9	15.74	97.27	82.5	382.0	146.7
125.00	Bot - Section 5	0.3125	36.476	35.868	5926.5	18.89	116.72	78.9	320.0	
126.00		0.3125	36.237	35.632	5810.1	19.04	115.96	79.0	315.8	121.6
128.00		0.3125	35.761	35.159	5582.0	18.77	114.44	79.3	307.4	240.9
130.00	Bot - Section 6	0.3125	35.285	34.687	5360.0	18.50	112.91	79.6	299.2	237.7
132.00		0.3125	34.808	34.214	5143.9	18.23	111.39	80.0	291.1	473.1
134.00		0.3125	34.332	33.742	4933.7	17.96	109.86	80.3	283.0	466.7
135.00	Top - Section 5	0.3125	34.719	34.125	5104.0	18.18	111.10	0.0	0.0	230.9
136.00		0.3125	34.481	33.889	4998.7	18.04	110.34	80.2	285.5	115.7
138.00		0.3125	34.004	33.417	4792.5	17.78	108.81	80.5	277.6	229.0
140.00	Top - Section 6	0.3125	33.528	32.944	4592.1	17.51	107.29	80.8	269.8	225.8
140.00	Bot - Section 7	0.2500	33.528	26.405	3694.4	21.88	134.11	75.2	217.0	
142.00		0.2500	33.051	26.027	3538.0	21.90	132.21	75.6	210.8	178.4
144.00		0.2500	32.575	25.649	3386.1	21.56	130.30	76.0	204.7	175.8
146.00		0.2500	32.099	25.271	3238.6	21.23	128.39	76.4	198.7	173.3
148.00		0.2500	31.622	24.893	3095.4	20.89	126.49	76.8	192.8	170.7
150.00		0.2500	31.146	24.515	2956.5	20.56	124.58	77.2	187.0	168.1
152.00		0.2500	30.669	24.137	2821.9	20.22	122.68	77.6	181.2	165.6
154.00		0.2500	30.193	23.759	2691.4	19.88	120.77	78.0	175.6	163.0
156.00		0.2500	29.717	23.381	2564.9	19.55	118.87	78.4	170.0	160.4
158.00		0.2500	29.240	23.003	2442.5	19.21	116.96	78.8	164.5	157.8
160.00		0.2500	28.764	22.625	2324.1	18.88	115.06	79.2	159.1	155.3
162.00		0.2500	28.288	22.247	2209.5	18.54	113.15	79.6	153.8	152.7
164.00		0.2500	27.811	21.869	2098.8	18.20	111.24	80.0	148.6	150.1
165.00		0.2500	27.573	21.680	2044.9	18.04	110.29	80.2	146.1	74.1
166.00		0.2500	27.335	21.491	1991.9	17.87	109.34	80.4	143.5	73.5
168.00		0.2500	26.858	21.113	1888.6	17.53	107.43	80.8	138.5	145.0
170.00		0.2500	26.382	20.735	1789.0	17.20	105.53	81.2	133.6	142.4
172.00		0.2500	25.906	20.357	1692.9	16.86	103.62	81.6	128.7	139.8
174.00		0.2500	25.429	19.979	1600.3	16.52	101.72	82.0	124.0	137.3
175.00		0.2500	25.191	19.790	1555.3	16.36	100.76	82.2	121.6	67.7
176.00		0.2500	24.953	19.601	1511.2	16.19	99.81	82.4	119.3	67.0
178.00		0.2500	24.476	19.223	1425.4	15.85	97.91	82.5	114.7	132.1
180.00	Top - Section 7	0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	129.5
180.00	Bot - Section 8	0.2810	24.000	20.939	1473.6	13.80	85.41	36.0	122.8	
182.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
184.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
185.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	71.3
186.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	71.3
188.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
190.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
192.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5

Increment Length: 2 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
194.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	142.5
195.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36.0	122.8	71.3
										38209.1

Wind Loading - Shaft

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

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Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind
Dead Load Factor 1.20
Wind Load Factor 1.00

Iterations 32

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	25.445	27.99	558.28	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	25.445	27.99	554.15	0.772 *	0.000	2.00	10.876	8.40	235.0	0.0	723.8
4.00		1.00	0.70	25.445	27.99	550.03	0.774 *	0.000	2.00	10.795	8.36	233.9	0.0	718.4
6.00		1.00	0.70	25.445	27.99	545.91	0.776 *	0.000	2.00	10.714	8.31	232.7	0.0	713.0
8.00		1.00	0.70	25.445	27.99	541.78	0.778 *	0.000	2.00	10.634	8.27	231.6	0.0	707.6
10.00		1.00	0.70	25.445	27.99	537.66	0.780 *	0.000	2.00	10.553	8.23	230.4	0.0	702.2
12.00		1.00	0.70	25.445	27.99	533.54	0.782 *	0.000	2.00	10.472	8.19	229.3	0.0	696.8
14.00		1.00	0.70	25.445	27.99	529.41	0.784 *	0.000	2.00	10.392	8.15	228.1	0.0	691.4
16.00		1.00	0.70	25.445	27.99	525.29	0.786 *	0.000	2.00	10.311	8.11	227.0	0.0	686.0
18.00		1.00	0.70	25.445	27.99	521.17	0.789 *	0.000	2.00	10.231	8.07	225.8	0.0	680.6
20.00		1.00	0.70	25.445	27.99	517.04	0.791 *	0.000	2.00	10.150	8.03	224.7	0.0	675.1
22.00		1.00	0.70	25.445	27.99	512.92	0.793 *	0.000	2.00	10.069	7.99	223.5	0.0	669.7
24.00		1.00	0.70	25.445	27.99	508.80	0.795 *	0.000	2.00	9.989	7.94	222.3	0.0	664.3
26.00		1.00	0.70	25.445	27.99	504.67	0.798 *	0.000	2.00	9.908	7.90	221.2	0.0	658.9
28.00		1.00	0.70	25.445	27.99	500.55	0.800 *	0.000	2.00	9.827	7.86	220.0	0.0	653.5
30.00		1.00	0.70	25.467	28.01	496.64	0.802 *	0.000	2.00	9.747	7.82	219.1	0.0	648.1
32.00		1.00	0.71	25.941	28.53	497.07	0.805 *	0.000	2.00	9.666	7.78	222.0	0.0	642.7
34.00		1.00	0.73	26.394	29.03	497.20	0.807 *	0.000	2.00	9.586	7.74	224.7	0.0	637.3
36.00		1.00	0.74	26.829	29.51	497.04	0.810 *	0.000	2.00	9.505	7.70	227.1	0.0	631.9
38.00		1.00	0.75	27.246	29.97	496.63	0.812 *	0.000	2.00	9.424	7.66	229.4	0.0	626.5
40.00		1.00	0.76	27.649	30.41	495.98	0.815 *	0.000	2.00	9.344	7.61	231.6	0.0	621.1
41.00	Bot - Section 2	1.00	0.77	27.844	30.63	495.58	0.817 *	0.000	1.00	4.642	3.79	116.1	0.0	308.5
42.00		1.00	0.77	28.037	30.84	495.12	0.818 *	0.000	1.00	4.695	3.84	118.5	0.0	619.3
44.00		1.00	0.78	28.412	31.25	494.07	0.820 *	0.000	2.00	9.331	7.65	239.2	0.0	1230.6
46.00		1.00	0.79	28.775	31.65	492.83	0.823 *	0.000	2.00	9.250	7.61	241.0	0.0	1219.8
48.00	Top - Section 1	1.00	0.80	29.127	32.04	491.42	0.826 *	0.000	2.00	9.169	7.57	242.6	0.0	1209.0
50.00		1.00	0.81	29.469	32.42	498.01	0.823 *	0.000	2.00	9.089	7.48	242.6	0.0	604.0
52.00		1.00	0.82	29.801	32.78	496.35	0.826 *	0.000	2.00	9.008	7.44	244.0	0.0	598.6
54.00		1.00	0.83	30.124	33.14	494.54	0.829 *	0.000	2.00	8.927	7.40	245.3	0.0	593.2
56.00		1.00	0.84	30.439	33.48	492.61	0.754 *	0.000	2.00	8.847	6.67	223.3	0.0	587.8
58.00		1.00	0.85	30.745	33.82	490.55	0.730	0.000	2.00	8.766	6.40	216.4	0.0	582.4
60.00		1.00	0.85	31.045	34.15	488.38	0.730	0.000	2.00	8.686	6.34	216.5	0.0	577.0
62.00		1.00	0.86	31.337	34.47	486.10	0.730	0.000	2.00	8.605	6.28	216.5	0.0	571.6
64.00		1.00	0.87	31.622	34.78	483.71	0.730	0.000	2.00	8.524	6.22	216.5	0.0	566.2
66.00		1.00	0.88	31.902	35.09	481.22	0.730	0.000	2.00	8.444	6.16	216.3	0.0	560.8
68.00		1.00	0.89	32.175	35.39	478.64	0.730	0.000	2.00	8.363	6.11	216.1	0.0	555.4
70.00		1.00	0.89	32.442	35.69	475.97	0.730	0.000	2.00	8.282	6.05	215.8	0.0	550.0
72.00		1.00	0.90	32.705	35.97	473.22	0.730	0.000	2.00	8.202	5.99	215.4	0.0	544.6
74.00		1.00	0.91	32.962	36.26	470.38	0.730	0.000	2.00	8.121	5.93	215.0	0.0	539.2
76.00		1.00	0.91	33.214	36.54	467.47	0.730	0.000	2.00	8.041	5.87	214.4	0.0	533.8
78.00		1.00	0.92	33.461	36.81	464.48	0.730	0.000	2.00	7.960	5.81	213.9	0.0	528.4
80.00		1.00	0.93	33.704	37.07	461.41	0.730	0.000	2.00	7.879	5.75	213.2	0.0	523.0
82.00		1.00	0.93	33.943	37.34	458.28	0.730	0.000	2.00	7.799	5.69	212.6	0.0	517.6
84.00		1.00	0.94	34.177	37.59	455.08	0.730	0.000	2.00	7.718	5.63	211.8	0.0	512.2
85.00	Bot - Section 3	1.00	0.94	34.293	37.72	453.46	0.730	0.000	1.00	3.829	2.80	105.4	0.0	254.1
86.00		1.00	0.95	34.408	37.85	451.82	0.730	0.000	1.00	3.883	2.83	107.3	0.0	510.4
88.00		1.00	0.95	34.634	38.10	448.50	0.730	0.000	2.00	7.705	5.62	214.3	0.0	1012.7

Wind Loading - Shaft

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II
4/4/2023
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90.00	1.00	0.96	34.858	38.34	445.11	0.730	0.000	2.00	7.624	5.57	213.4	0.0	1001.9
91.00 Top - Section 2	1.00	0.96	34.968	38.46	443.40	0.730	0.000	1.00	3.782	2.76	106.2	0.0	496.9
92.00	1.00	0.96	35.077	38.58	450.56	0.730	0.000	1.00	3.762	2.75	106.0	0.0	249.6
93.00 Top - Section 3	1.00	0.97	35.186	38.70	448.83	0.730	0.000	1.00	3.742	2.73	105.7	0.0	248.2
94.00	1.00	0.97	35.293	38.82	447.09	0.730	0.000	1.00	3.721	2.72	105.5	0.0	211.9
96.00	1.00	0.98	35.506	39.06	443.57	0.730	0.000	2.00	7.382	5.39	210.5	0.0	420.4
98.00	1.00	0.98	35.716	39.29	439.99	0.730	0.000	2.00	7.302	5.33	209.4	0.0	415.7
100.00	1.00	0.99	35.923	39.52	436.36	0.730	0.000	2.00	7.221	5.27	208.3	0.0	411.1
102.00	1.00	0.99	36.127	39.74	432.69	0.730	0.000	2.00	7.141	5.21	207.1	0.0	406.5
104.00	1.00	1.00	36.328	39.96	428.96	0.730	0.000	2.00	7.060	5.15	205.9	0.0	401.8
106.00	1.00	1.00	36.526	40.18	425.19	0.730	0.000	2.00	6.979	5.09	204.7	0.0	397.2
108.00	1.00	1.01	36.721	40.39	421.37	0.730	0.000	2.00	6.899	5.04	203.4	0.0	392.6
110.00	1.00	1.02	36.914	40.61	417.51	0.730	0.000	2.00	6.818	4.98	202.1	0.0	387.9
112.00	1.00	1.02	37.105	40.82	413.61	0.730	0.000	2.00	6.737	4.92	200.7	0.0	383.3
114.00	1.00	1.03	37.293	41.02	409.67	0.730	0.000	2.00	6.657	4.86	199.3	0.0	378.7
116.00	1.00	1.03	37.479	41.23	405.68	0.733 *	0.000	2.00	6.576	4.82	198.7	0.0	374.1
118.00	1.00	1.04	37.662	41.43	401.66	0.736 *	0.000	2.00	6.496	4.78	198.0	0.0	369.4
120.00	1.00	1.04	37.844	41.63	397.59	0.739 *	0.000	2.00	6.415	4.74	197.2	0.0	364.8
122.00	1.00	1.05	38.023	41.83	393.49	0.741 *	0.000	2.00	6.334	4.70	196.4	0.0	360.2
124.00	1.00	1.05	38.200	42.02	389.36	0.744 *	0.000	2.00	6.254	4.66	195.6	0.0	355.5
125.00 Top - Section 4	1.00	1.05	38.288	42.12	387.27	0.747 *	0.000	1.00	3.097	2.31	97.4	0.0	176.0
126.00	1.00	1.06	38.375	42.21	385.18	0.748 *	0.000	1.00	3.076	2.30	97.2	0.0	146.0
128.00	1.00	1.06	38.548	42.40	380.98	0.751 *	0.000	2.00	6.092	4.57	193.9	0.0	289.1
130.00 Bot - Section 6	1.00	1.07	38.719	42.59	376.73	0.754 *	0.000	2.00	6.012	4.53	193.0	0.0	285.2
132.00	1.00	1.07	38.888	42.78	372.46	0.757 *	0.000	2.00	6.037	4.57	195.5	0.0	567.8
134.00	1.00	1.07	39.056	42.96	368.15	0.761 *	0.000	2.00	5.956	4.53	194.6	0.0	560.0
135.00 Top - Section 5	1.00	1.08	39.139	43.05	365.99	0.763 *	0.000	1.00	2.948	2.25	96.9	0.0	277.1
136.00	1.00	1.08	39.221	43.14	370.53	0.760 *	0.000	1.00	2.928	2.23	96.0	0.0	138.9
138.00	1.00	1.08	39.385	43.32	366.17	0.763 *	0.000	2.00	5.795	4.42	191.5	0.0	274.8
140.00 Top - Section 6	1.00	1.09	39.548	43.50	361.79	0.766 *	0.000	2.00	5.714	4.38	190.5	0.0	271.0
142.00	1.00	1.09	39.708	43.68	357.37	0.770 *	0.000	2.00	5.634	4.34	189.5	0.0	214.1
144.00	1.00	1.10	39.867	43.85	352.92	0.730	0.000	2.00	5.553	4.05	177.8	0.0	211.0
146.00	1.00	1.10	40.025	44.03	348.45	0.730	0.000	2.00	5.473	4.00	175.9	0.0	207.9
148.00	1.00	1.11	40.181	44.20	343.94	0.730	0.000	2.00	5.392	3.94	174.0	0.0	204.8
150.00	1.00	1.11	40.335	44.37	339.41	0.730	0.000	2.00	5.311	3.88	172.0	0.0	201.7
152.00	1.00	1.11	40.488	44.54	334.85	0.730	0.000	2.00	5.231	3.82	170.1	0.0	198.7
154.00	1.00	1.12	40.639	44.70	330.27	0.730	0.000	2.00	5.150	3.76	168.1	0.0	195.6
156.00	1.00	1.12	40.790	44.87	325.66	0.730	0.000	2.00	5.069	3.70	166.0	0.0	192.5
158.00	1.00	1.13	40.938	45.03	321.02	0.730	0.000	2.00	4.989	3.64	164.0	0.0	189.4
160.00	1.00	1.13	41.086	45.19	316.36	0.730	0.000	2.00	4.908	3.58	161.9	0.0	186.3
162.00	1.00	1.13	41.232	45.35	311.67	0.730	0.000	2.00	4.828	3.52	159.8	0.0	183.2
164.00	1.00	1.14	41.377	45.51	306.96	0.730	0.000	2.00	4.747	3.47	157.7	0.0	180.1
165.00 Appurtenance(s)	1.00	1.14	41.448	45.59	304.59	0.730	0.000	1.00	2.343	1.71	78.0	0.0	88.9
166.00	1.00	1.14	41.520	45.67	302.22	0.730	0.000	1.00	2.323	1.70	77.5	0.0	88.1
168.00	1.00	1.15	41.662	45.83	297.47	0.730	0.000	2.00	4.586	3.35	153.4	0.0	174.0
170.00	1.00	1.15	41.804	45.98	292.68	0.730	0.000	2.00	4.505	3.29	151.2	0.0	170.9
172.00	1.00	1.15	41.943	46.14	287.88	0.730	0.000	2.00	4.425	3.23	149.0	0.0	167.8
174.00	1.00	1.16	42.082	46.29	283.05	0.730	0.000	2.00	4.344	3.17	146.8	0.0	164.7
175.00 Appurtenance(s)	1.00	1.16	42.151	46.37	280.63	0.730	0.000	1.00	2.142	1.56	72.5	0.0	81.2
176.00	1.00	1.16	42.220	46.44	278.20	0.730	0.000	1.00	2.122	1.55	71.9	0.0	80.4
178.00	1.00	1.17	42.356	46.59	273.33	0.730	0.000	2.00	4.183	3.05	142.3	0.0	158.5
180.00 Top - Section 7	1.00	1.17	42.492	46.74	268.44	1.200 *	0.000	2.00	4.102	4.92	230.1	0.0	155.4
182.00	1.00	1.17	42.626	46.89	264.78	1.200 *	0.000	2.00	4.000	4.80	225.1	0.0	171.0
184.00	1.00	1.18	42.759	47.04	265.19	0.600	0.000	2.00	4.000	2.40	112.9	0.0	171.0
185.00 Appurtenance(s)	1.00	1.18	42.826	47.11	265.40	0.600	0.000	1.00	2.000	1.20	56.5	0.0	85.5
186.00	1.00	1.18	42.892	47.18	265.60	0.600	0.000	1.00	2.000	1.20	56.6	0.0	85.5
188.00	1.00	1.18	43.023	47.33	266.01	0.600	0.000	2.00	4.000	2.40	113.6	0.0	171.0

Wind Loading - Shaft

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

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190.00	1.00	1.19	43.153	47.47	266.41	0.600	0.000	2.00	4.000	2.40	113.9	0.0	171.0
192.00	1.00	1.19	43.283	47.61	266.81	0.600	0.000	2.00	4.000	2.40	114.3	0.0	171.0
194.00	1.00	1.19	43.411	47.75	267.21	0.600	0.000	2.00	4.000	2.40	114.6	0.0	171.0
195.00 Appurtenance(s)	1.00	1.20	43.475	47.82	267.40	0.600	0.000	1.00	2.000	1.20	57.4	0.0	85.5
							Totals:	**195.00**			**19,384.7**		**45,850.9**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

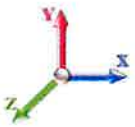
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 32

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	HRK12 (Handrail Kit)	1	43.475	47.822	1.00	1.00	6.75	314.06	0.000	0.000	322.80	0.00	0.00
2	195.00	Low Profile	1	43.475	47.822	1.00	1.00	26.00	2160.00	0.000	0.000	1243.38	0.00	0.00
3	195.00	PRK-1245 (kicker kit)	1	43.475	47.822	1.00	1.00	9.50	557.89	0.000	0.000	454.31	0.00	0.00
4	195.00	(3) SFS-H-L (V-Braces)	1	43.475	47.822	1.00	1.00	6.70	276.00	0.000	0.000	320.41	0.00	0.00
5	195.00	TD-RRH8x20-25	3	43.475	47.822	0.50	1.00	6.07	252.00	0.000	0.000	290.52	0.00	0.00
6	195.00	NNVV-65B-R4	3	43.475	47.822	0.73	1.00	26.87	278.64	0.000	0.000	1285.05	0.00	0.00
7	195.00	1900MHz RRH (65MHz)	3	43.475	47.822	0.50	1.00	4.16	216.00	0.000	0.000	198.70	0.00	0.00
8	195.00	800 MHz RRH	6	43.475	47.822	0.50	1.00	7.47	381.60	0.000	0.000	357.23	0.00	0.00
9	195.00	APXVTM14-C-I20	3	43.475	47.822	0.78	1.00	14.84	202.32	0.000	0.000	709.47	0.00	0.00
10	185.00	(3) SitePro 1 PRK-SFS-L	1	42.826	47.108	0.80	0.80	5.36	276.00	0.000	0.000	252.50	0.00	0.00
11	185.00	Powerwave LGP21903	6	42.826	47.108	0.40	0.80	0.65	39.60	0.000	0.000	30.53	0.00	0.00
12	185.00	Sector Frames	1	42.826	47.108	1.00	1.00	22.00	1800.00	0.000	0.000	1036.38	0.00	0.00
13	185.00	Cci DMP65R-BU8DA	6	42.826	47.108	0.58	0.80	62.62	691.20	0.000	0.000	2949.76	0.00	0.00
14	185.00	Ericsson RRUS 4478 B14	3	42.826	47.108	0.40	0.80	2.21	215.64	0.000	0.000	104.02	0.00	0.00
15	185.00	(3) SitePro 1 SFS-L with	1	42.826	47.108	0.80	0.80	8.00	616.80	0.000	0.000	376.87	0.00	0.00
16	185.00	(3) SitePro 1 HRK14-3HD	1	42.826	47.108	0.80	0.80	7.80	487.93	0.000	0.000	367.44	0.00	0.00
17	185.00	Ericsson RRUS 8843 B2	3	42.826	47.108	0.40	0.80	1.97	259.20	0.000	0.000	92.71	0.00	0.00
18	185.00	Raycap DC6-48-60-18-8F	1	42.826	47.108	0.40	0.80	0.37	38.16	0.000	0.000	17.34	0.00	0.00
19	185.00	Powerwave LGP21401	6	42.826	47.108	0.40	0.80	3.10	101.52	0.000	0.000	145.85	0.00	0.00
20	185.00	Powerwave 7770	3	42.826	47.108	0.58	0.80	9.64	126.00	0.000	0.000	453.94	0.00	0.00
21	185.00	Raycap	1	42.826	47.108	0.40	0.80	1.91	19.20	0.000	0.000	90.07	0.00	0.00
22	185.00	Raycap DC6-48-60-18-8C	1	42.826	47.108	0.40	0.80	0.50	24.00	0.000	0.000	23.74	0.00	0.00
23	185.00	Ericsson 4449 B5/B12	3	42.826	47.108	0.40	0.80	2.36	255.60	0.000	0.000	111.36	0.00	0.00
24	175.00	Ericsson 4449 B71 + B85	3	42.151	46.366	0.54	0.80	3.17	255.60	0.000	0.000	146.88	0.00	0.00
25	175.00	RFS	3	42.151	46.366	0.50	0.80	9.61	146.52	0.000	0.000	445.69	0.00	0.00
26	175.00	RFS	3	42.151	46.366	0.56	0.80	34.00	442.08	0.000	0.000	1576.60	0.00	0.00
27	175.00	Commscope	3	42.151	46.366	0.64	0.80	22.02	179.28	0.000	0.000	1021.10	0.00	0.00
28	175.00	Platform w/ Hand Rail	1	42.151	46.366	1.00	1.00	32.00	1920.00	0.000	0.000	1483.72	0.00	0.00
29	175.00	Ericsson RRUS11 B2	6	42.151	46.366	0.40	0.80	6.05	364.32	0.000	0.000	280.42	0.00	0.00
30	175.00	Ericsson RRUS11 B4	3	42.151	46.366	0.40	0.80	3.02	182.16	0.000	0.000	140.21	0.00	0.00
31	165.00	BSAMNT-SBS-1-2	3	41.448	45.593	0.56	0.75	0.00	92.16	0.000	0.000	0.00	0.00	0.00
32	165.00	RMQLP-4096-HK Plat. +	1	41.448	45.593	1.00	1.00	51.70	3372.06	0.000	0.000	2357.17	0.00	0.00
33	165.00	Raycap	9	41.448	45.593	0.38	0.75	13.70	345.60	0.000	0.000	624.74	0.00	0.00
34	165.00	B5/B13 RRH-BR04C	12	41.448	45.593	0.38	0.75	8.42	1012.32	0.000	0.000	383.67	0.00	0.00
35	165.00	B2/B66A RRH-BR049	12	41.448	45.593	0.38	0.75	8.42	1215.36	0.000	0.000	383.67	0.00	0.00
36	165.00	Samsung MT6407-77A	6	41.448	45.593	0.52	0.75	14.77	571.68	0.000	0.000	673.57	0.00	0.00
37	165.00	Commscope	15	41.448	45.593	0.62	0.75	75.45	785.70	0.000	0.000	3439.88	0.00	0.00
							Totals:		**20,474.21**			**24,191.70**		

Total Applied Force Summary

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

TES Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 32

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		235.03	813.46	0.00	0.00
4.00		233.88	808.06	0.00	0.00
6.00		232.73	802.65	0.00	0.00
8.00		231.57	797.25	0.00	0.00
10.00		230.42	791.85	0.00	0.00
12.00		229.27	786.45	0.00	0.00
14.00		228.12	781.04	0.00	0.00
16.00		226.96	775.64	0.00	0.00
18.00		225.81	770.24	0.00	0.00
20.00		224.66	764.84	0.00	0.00
22.00		223.50	759.43	0.00	0.00
24.00		222.35	754.03	0.00	0.00
26.00		221.20	748.63	0.00	0.00
28.00		220.04	743.23	0.00	0.00
30.00		219.08	737.83	0.00	0.00
32.00		221.98	732.42	0.00	0.00
34.00		224.66	727.02	0.00	0.00
36.00		227.14	721.62	0.00	0.00
38.00		229.44	716.22	0.00	0.00
40.00		231.58	710.81	0.00	0.00
41.00		116.14	353.38	0.00	0.00
42.00		118.49	664.18	0.00	0.00
44.00		239.19	1320.25	0.00	0.00
46.00		240.96	1309.45	0.00	0.00
48.00		242.60	1298.65	0.00	0.00
50.00		242.60	693.73	0.00	0.00
52.00		243.98	688.32	0.00	0.00
54.00		245.26	682.92	0.00	0.00
56.00		223.35	677.52	0.00	0.00
58.00		216.42	672.12	0.00	0.00
60.00		216.52	666.71	0.00	0.00
62.00		216.53	661.31	0.00	0.00
64.00		216.45	655.91	0.00	0.00
66.00		216.30	650.51	0.00	0.00
68.00		216.07	645.11	0.00	0.00
70.00		215.77	639.70	0.00	0.00
72.00		215.39	634.30	0.00	0.00
74.00		214.95	628.90	0.00	0.00
76.00		214.45	623.50	0.00	0.00
78.00		213.88	618.09	0.00	0.00
80.00		213.25	612.69	0.00	0.00
82.00		212.56	607.29	0.00	0.00
84.00		211.82	601.89	0.00	0.00
85.00		105.43	298.92	0.00	0.00
86.00		107.28	555.25	0.00	0.00
88.00		214.28	1102.40	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 16

Tower Engineering Solutions

90.00		213.41	1091.60	0.00	0.00
91.00		106.19	541.75	0.00	0.00
92.00		105.96	294.43	0.00	0.00
93.00		105.72	293.07	0.00	0.00
94.00		105.47	256.76	0.00	0.00
96.00		210.48	510.05	0.00	0.00
98.00		209.42	505.41	0.00	0.00
100.00		208.30	500.78	0.00	0.00
102.00		207.14	496.15	0.00	0.00
104.00		205.95	491.52	0.00	0.00
106.00		204.70	486.89	0.00	0.00
108.00		203.42	482.26	0.00	0.00
110.00		202.10	477.63	0.00	0.00
112.00		200.74	473.00	0.00	0.00
114.00		199.35	468.37	0.00	0.00
116.00		198.73	463.74	0.00	0.00
118.00		198.00	459.11	0.00	0.00
120.00		197.23	454.48	0.00	0.00
122.00		196.45	449.85	0.00	0.00
124.00		195.63	445.22	0.00	0.00
125.00		97.39	220.87	0.00	0.00
126.00		97.18	190.82	0.00	0.00
128.00		193.92	378.75	0.00	0.00
130.00		193.02	374.89	0.00	0.00
132.00		195.53	657.44	0.00	0.00
134.00		194.62	649.73	0.00	0.00
135.00		96.86	321.97	0.00	0.00
136.00		96.04	183.71	0.00	0.00
138.00		191.55	364.52	0.00	0.00
140.00		190.54	360.66	0.00	0.00
142.00		189.52	303.79	0.00	0.00
144.00		177.78	300.70	0.00	0.00
146.00		175.89	297.61	0.00	0.00
148.00		173.97	294.52	0.00	0.00
150.00		172.03	291.44	0.00	0.00
152.00		170.06	288.35	0.00	0.00
154.00		168.07	285.26	0.00	0.00
156.00		166.05	282.18	0.00	0.00
158.00		164.00	279.09	0.00	0.00
160.00		161.93	276.00	0.00	0.00
162.00		159.84	272.91	0.00	0.00
164.00		157.72	269.83	0.00	0.00
165.00	(58) attachments	7940.69	7528.64	0.00	0.00
166.00		77.45	118.01	0.00	0.00
168.00		153.42	233.70	0.00	0.00
170.00		151.23	230.61	0.00	0.00
172.00		149.02	227.53	0.00	0.00
174.00		146.79	224.44	0.00	0.00
175.00	(22) attachments	5167.12	3601.02	0.00	0.00
176.00		71.93	106.51	0.00	0.00
178.00		142.26	210.70	0.00	0.00
180.00		288.97	207.61	0.00	0.00
182.00		284.15	223.17	0.00	0.00
184.00		112.89	223.17	0.00	0.00
185.00	(37) attachments	6109.03	5062.44	0.00	0.00
186.00		56.62	90.08	0.00	0.00
188.00		113.58	180.16	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Tower Engineering Solutions

190.00		113.92	180.16	0.00	0.00
192.00		114.27	180.16	0.00	0.00
194.00		114.60	180.16	0.00	0.00
195.00	(22) attachments	5239.26	4728.60	0.00	0.00
	Totals:	**43,694.42**	**74,329.68**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

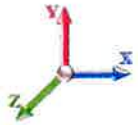
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 32

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.119	1.058	25.445	0.00	0.00
2.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.119	1.058	25.445	0.00	0.00
4.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.120	1.060	25.445	0.00	0.00
4.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.120	1.060	25.445	0.00	0.00
6.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.121	1.063	25.445	0.00	0.00
6.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.121	1.063	25.445	0.00	0.00
8.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.122	1.066	25.445	0.00	0.00
8.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.122	1.066	25.445	0.00	0.00
10.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.123	1.069	25.445	0.00	0.00
10.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.123	1.069	25.445	0.00	0.00
12.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.124	1.071	25.445	0.00	0.00
12.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.124	1.071	25.445	0.00	0.00
14.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.125	1.074	25.445	0.00	0.00
14.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.125	1.074	25.445	0.00	0.00
16.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.126	1.077	25.445	0.00	0.00
16.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.126	1.077	25.445	0.00	0.00
18.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.127	1.080	25.445	0.00	0.00
18.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.127	1.080	25.445	0.00	0.00
20.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.128	1.083	25.445	0.00	0.00
20.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.128	1.083	25.445	0.00	0.00
22.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.129	1.086	25.445	0.00	0.00
22.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.129	1.086	25.445	0.00	0.00
24.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.130	1.089	25.445	0.00	0.00
24.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.130	1.089	25.445	0.00	0.00
26.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.131	1.093	25.445	0.00	0.00
26.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.131	1.093	25.445	0.00	0.00
28.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.132	1.096	25.445	0.00	0.00
28.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.132	1.096	25.445	0.00	0.00
30.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.133	1.099	25.467	0.00	0.00
30.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.133	1.099	25.467	0.00	0.00
32.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.134	1.102	25.941	0.00	0.00
32.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.134	1.102	25.941	0.00	0.00
34.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.135	1.106	26.394	0.00	0.00
34.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.135	1.106	26.394	0.00	0.00
36.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.136	1.109	26.829	0.00	0.00
36.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.136	1.109	26.829	0.00	0.00
38.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.138	1.113	27.246	0.00	0.00
38.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.138	1.113	27.246	0.00	0.00
40.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.139	1.116	27.649	0.00	0.00
40.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.139	1.116	27.649	0.00	0.00
41.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.140	1.119	27.844	0.00	0.00
41.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.140	1.119	27.844	0.00	0.00
42.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.140	1.121	28.037	0.00	0.00
42.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.140	1.121	28.037	0.00	0.00
44.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.141	1.124	28.412	0.00	0.00
44.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.141	1.124	28.412	0.00	0.00
46.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.142	1.127	28.775	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

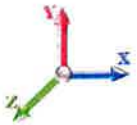
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

TES Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 32

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
46.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.142	1.127	28.775	0.00	0.00
48.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.144	1.131	29.127	0.00	0.00
48.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.144	1.131	29.127	0.00	0.00
50.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.143	1.128	29.469	0.00	0.00
50.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.143	1.128	29.469	0.00	0.00
52.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.144	1.132	29.801	0.00	0.00
52.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.144	1.132	29.801	0.00	0.00
54.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.145	1.136	30.124	0.00	0.00
54.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.145	1.136	30.124	0.00	0.00
56.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.111	1.033	30.439	0.00	0.00
56.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.111	1.033	30.439	0.00	0.00
58.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.076	0.000	30.745	0.00	0.00
60.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.077	0.000	31.045	0.00	0.00
62.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.077	0.000	31.337	0.00	0.00
64.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.078	0.000	31.622	0.00	0.00
66.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.079	0.000	31.902	0.00	0.00
68.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.080	0.000	32.175	0.00	0.00
70.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.080	0.000	32.442	0.00	0.00
72.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.081	0.000	32.705	0.00	0.00
74.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.082	0.000	32.962	0.00	0.00
76.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.083	0.000	33.214	0.00	0.00
78.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.084	0.000	33.461	0.00	0.00
80.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.085	0.000	33.704	0.00	0.00
82.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.085	0.000	33.943	0.00	0.00
84.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.086	0.000	34.177	0.00	0.00
85.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.087	0.000	34.293	0.00	0.00
86.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.088	0.000	34.408	0.00	0.00
88.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.088	0.000	34.634	0.00	0.00
90.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.089	0.000	34.858	0.00	0.00
91.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.090	0.000	34.968	0.00	0.00
92.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.089	0.000	35.077	0.00	0.00
93.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.089	0.000	35.186	0.00	0.00
94.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.090	0.000	35.293	0.00	0.00
96.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.090	0.000	35.506	0.00	0.00
98.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.091	0.000	35.716	0.00	0.00
100.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.092	0.000	35.923	0.00	0.00
102.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.093	0.000	36.127	0.00	0.00
104.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.094	0.000	36.328	0.00	0.00
106.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.096	0.000	36.526	0.00	0.00
108.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.097	0.000	36.721	0.00	0.00
110.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.098	0.000	36.914	0.00	0.00
112.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.099	0.000	37.105	0.00	0.00
114.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.100	0.000	37.293	0.00	0.00
116.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.101	1.004	37.479	0.00	0.00
118.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.103	1.008	37.662	0.00	0.00
120.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.104	1.012	37.844	0.00	0.00
122.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.105	1.016	38.023	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

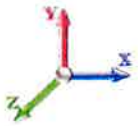
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 32

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
124.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.107	1.020	38.200	0.00	0.00
125.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.108	1.023	38.288	0.00	0.00
126.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.108	1.025	38.375	0.00	0.00
128.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.109	1.028	38.548	0.00	0.00
130.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.111	1.033	38.719	0.00	0.00
132.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.112	1.037	38.888	0.00	0.00
134.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.114	1.042	39.056	0.00	0.00
135.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.115	1.045	39.139	0.00	0.00
136.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.114	1.042	39.221	0.00	0.00
138.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.115	1.045	39.385	0.00	0.00
140.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.117	1.050	39.548	0.00	0.00
142.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.118	1.055	39.708	0.00	0.00
144.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.060	0.000	39.867	0.00	0.00
178.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.26	0.00	0.063	0.000	42.356	0.00	0.00
180.00	(3) Bypass Stiffeners	Yes	2.00	0.600	12.60	2.10	1.26	0.512	0.000	42.492	58.89	0.00
182.00	(3) Bypass Stiffeners	Yes	2.00	0.600	12.60	2.10	1.26	0.525	0.000	42.626	59.08	0.00
184.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.26	0.00	0.066	0.000	42.759	0.00	0.00
										Totals:	**118.0**	**0.0**

Calculated Forces

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 123 mph Wind
Dead Load Factor 1.20
Wind Load Factor 1.00

Iterations 32

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-74.30	-43.75	0.00	-6548.5	0.00	6548.57	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.869
2.00	-73.42	-43.62	0.00	-6461.0	0.00	6461.07	5777.89	1549.56	8174.96	7566.71	0.02	-0.080	0.000	0.867
4.00	-72.55	-43.48	0.00	-6373.8	0.00	6373.84	5752.42	1537.95	8052.92	7476.52	0.07	-0.161	0.000	0.866
6.00	-71.69	-43.35	0.00	-6286.8	0.00	6286.88	5726.67	1526.34	7931.81	7386.49	0.15	-0.243	0.000	0.864
8.00	-70.83	-43.22	0.00	-6200.1	0.00	6200.18	5700.65	1514.73	7811.61	7296.62	0.27	-0.325	0.000	0.863
10.00	-69.98	-43.08	0.00	-6113.7	0.00	6113.75	5674.37	1503.12	7692.32	7206.92	0.43	-0.408	0.000	0.861
12.00	-69.13	-42.95	0.00	-6027.5	0.00	6027.58	5647.82	1491.51	7573.96	7117.40	0.62	-0.492	0.000	0.860
14.00	-68.29	-42.82	0.00	-5941.6	0.00	5941.68	5620.99	1479.91	7456.51	7028.07	0.84	-0.577	0.000	0.858
16.00	-67.45	-42.68	0.00	-5856.0	0.00	5856.05	5593.90	1468.30	7339.98	6938.94	1.10	-0.662	0.000	0.857
18.00	-66.62	-42.55	0.00	-5770.6	0.00	5770.69	5566.54	1456.69	7224.37	6850.01	1.40	-0.749	0.000	0.855
20.00	-65.79	-42.41	0.00	-5685.6	0.00	5685.60	5538.91	1445.08	7109.68	6761.30	1.73	-0.836	0.000	0.854
22.00	-64.97	-42.28	0.00	-5600.7	0.00	5600.77	5511.02	1433.47	6995.90	6672.80	2.10	-0.923	0.000	0.852
24.00	-64.16	-42.14	0.00	-5516.2	0.00	5516.22	5482.85	1421.86	6883.05	6584.53	2.51	-1.012	0.000	0.850
26.00	-63.35	-42.01	0.00	-5431.9	0.00	5431.94	5454.41	1410.25	6771.11	6496.50	2.95	-1.101	0.000	0.849
28.00	-62.54	-41.87	0.00	-5347.9	0.00	5347.93	5425.71	1398.64	6660.08	6408.72	3.43	-1.192	0.000	0.847
30.00	-61.74	-41.73	0.00	-5264.1	0.00	5264.19	5396.74	1387.03	6549.98	6321.18	3.95	-1.283	0.000	0.845
32.00	-60.95	-41.59	0.00	-5180.7	0.00	5180.72	5367.49	1375.42	6440.79	6233.91	4.51	-1.374	0.000	0.843
34.00	-60.16	-41.45	0.00	-5097.5	0.00	5097.54	5337.98	1363.81	6332.52	6146.90	5.11	-1.467	0.000	0.841
36.00	-59.38	-41.30	0.00	-5014.6	0.00	5014.64	5308.20	1352.20	6225.17	6060.17	5.74	-1.561	0.000	0.840
38.00	-58.60	-41.15	0.00	-4932.0	0.00	4932.04	5278.15	1340.59	6118.74	5973.73	6.41	-1.655	0.000	0.838
40.00	-57.84	-40.97	0.00	-4849.7	0.00	4849.75	5247.84	1328.98	6013.22	5887.58	7.13	-1.750	0.000	0.836
41.00	-57.46	-40.89	0.00	-4808.7	0.00	4808.78	5232.58	1323.18	5960.81	5844.61	7.50	-1.799	0.000	0.835
42.00	-56.75	-40.82	0.00	-4767.9	0.00	4767.90	5217.25	1317.37	5908.62	5801.72	7.88	-1.847	0.000	0.834
44.00	-55.37	-40.63	0.00	-4686.2	0.00	4686.26	5186.39	1305.76	5804.94	5716.18	8.68	-1.944	0.000	0.831
46.00	-54.00	-40.44	0.00	-4604.9	0.00	4604.99	5155.27	1294.16	5702.18	5630.95	9.51	-2.042	0.000	0.829
48.00	-52.64	-40.24	0.00	-4524.1	0.00	4524.11	5181.33	1303.87	5788.10	5702.24	10.39	-2.141	0.000	0.805
50.00	-51.89	-40.06	0.00	-4443.6	0.00	4443.63	5150.16	1292.26	5685.49	5617.06	11.31	-2.241	0.000	0.802
52.00	-51.14	-39.88	0.00	-4363.5	0.00	4363.52	5118.73	1280.65	5583.79	5532.21	12.27	-2.337	0.000	0.800
54.00	-50.40	-39.69	0.00	-4283.7	0.00	4283.77	5087.02	1269.04	5483.02	5447.69	13.27	-2.433	0.000	0.797
56.00	-49.67	-39.52	0.00	-4204.3	0.00	4204.39	5055.04	1257.43	5383.16	5363.51	14.31	-2.531	0.000	0.795
58.00	-48.94	-39.36	0.00	-4125.3	0.00	4125.36	5022.80	1245.82	5284.21	5279.69	15.39	-2.629	0.000	0.792
60.00	-48.22	-39.19	0.00	-4046.6	0.00	4046.64	4990.29	1234.21	5186.19	5196.21	16.51	-2.728	0.000	0.789
62.00	-47.50	-39.03	0.00	-3968.2	0.00	3968.26	4957.51	1222.60	5089.08	5113.11	17.68	-2.828	0.000	0.787
64.00	-46.78	-38.86	0.00	-3890.2	0.00	3890.20	4924.46	1210.99	4992.89	5030.38	18.88	-2.929	0.000	0.784
66.00	-46.08	-38.70	0.00	-3812.4	0.00	3812.48	4891.14	1199.39	4897.62	4948.02	20.13	-3.031	0.000	0.781
68.00	-45.37	-38.53	0.00	-3735.0	0.00	3735.09	4857.55	1187.78	4803.27	4866.06	21.42	-3.134	0.000	0.778
70.00	-44.68	-38.36	0.00	-3658.0	0.00	3658.04	4823.69	1176.17	4709.83	4784.49	22.76	-3.237	0.000	0.775
72.00	-43.99	-38.19	0.00	-3581.3	0.00	3581.33	4789.56	1164.56	4617.32	4703.33	24.14	-3.342	0.000	0.772
74.00	-43.30	-38.01	0.00	-3504.9	0.00	3504.96	4755.17	1152.95	4525.72	4622.58	25.56	-3.447	0.000	0.768
76.00	-42.62	-37.84	0.00	-3428.9	0.00	3428.93	4720.51	1141.34	4435.03	4542.26	27.02	-3.553	0.000	0.765
78.00	-41.95	-37.67	0.00	-3353.2	0.00	3353.25	4685.57	1129.73	4345.27	4462.36	28.53	-3.660	0.000	0.762
80.00	-41.28	-37.49	0.00	-3277.9	0.00	3277.92	4650.37	1118.12	4256.42	4382.90	30.09	-3.768	0.000	0.758
82.00	-40.62	-37.32	0.00	-3202.9	0.00	3202.93	4614.90	1106.51	4168.49	4303.88	31.69	-3.877	0.000	0.754
84.00	-39.98	-37.12	0.00	-3128.3	0.00	3128.30	4579.16	1094.90	4081.48	4225.32	33.34	-3.987	0.000	0.750
85.00	-39.65	-37.04	0.00	-3091.1	0.00	3091.18	4561.19	1089.10	4038.32	4186.21	34.18	-4.042	0.000	0.748
86.00	-39.05	-36.95	0.00	-3054.1	0.00	3054.14	4543.15	1083.29	3995.39	4147.21	35.03	-4.098	0.000	0.746
88.00	-37.90	-36.73	0.00	-2980.2	0.00	2980.25	4506.88	1071.68	3910.21	4069.58	36.77	-4.209	0.000	0.742
90.00	-36.77	-36.49	0.00	-2906.8	0.00	2906.80	4470.33	1060.07	3825.95	3992.42	38.56	-4.322	0.000	0.737

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

91.00	-36.20	-36.38	0.00	-2870.3	0.00	2870.31	4519.12	1075.59	3938.79	4095.67	39.47	-4.379	0.000	0.710
92.00	-35.88	-36.28	0.00	-2833.9	0.00	2833.94	4500.93	1069.79	3896.39	4056.95	40.39	-4.436	0.000	0.708
93.00	-35.56	-36.19	0.00	-2797.6	0.00	2797.66	4482.67	1063.98	3854.22	4018.35	41.32	-4.490	0.000	0.705
93.00	-35.56	-36.19	0.00	-2797.6	0.00	2797.66	3684.61	913.29	3313.08	3312.42	41.32	-4.490	0.000	0.856
94.00	-35.26	-36.12	0.00	-2761.4	0.00	2761.47	3670.68	908.31	3277.08	3281.76	42.27	-4.544	0.000	0.853
96.00	-34.69	-35.94	0.00	-2689.2	0.00	2689.23	3642.60	898.36	3205.67	3220.68	44.20	-4.669	0.000	0.846
98.00	-34.12	-35.77	0.00	-2617.3	0.00	2617.35	3614.26	888.41	3135.05	3159.91	46.18	-4.796	0.000	0.839
100.00	-33.56	-35.59	0.00	-2545.8	0.00	2545.81	3585.64	878.46	3065.22	3099.48	48.21	-4.922	0.000	0.832
102.00	-33.01	-35.42	0.00	-2474.6	0.00	2474.63	3556.76	868.51	2996.17	3039.38	50.30	-5.050	0.000	0.825
104.00	-32.46	-35.24	0.00	-2403.7	0.00	2403.79	3527.61	858.56	2927.90	2979.62	52.44	-5.179	0.000	0.818
106.00	-31.91	-35.07	0.00	-2333.3	0.00	2333.31	3498.19	848.61	2860.43	2920.21	54.64	-5.308	0.000	0.810
108.00	-31.37	-34.89	0.00	-2263.1	0.00	2263.18	3468.50	838.66	2793.74	2861.17	56.88	-5.437	0.000	0.802
110.00	-30.84	-34.71	0.00	-2193.4	0.00	2193.41	3438.54	828.71	2727.83	2802.49	59.19	-5.568	0.000	0.793
112.00	-30.31	-34.54	0.00	-2123.9	0.00	2123.98	3408.31	818.76	2662.72	2744.18	61.54	-5.698	0.000	0.785
114.00	-29.78	-34.36	0.00	-2054.9	0.00	2054.91	3377.82	808.81	2598.39	2686.26	63.96	-5.830	0.000	0.776
116.00	-29.26	-34.18	0.00	-1986.2	0.00	1986.20	3347.05	798.86	2534.84	2628.73	66.42	-5.961	0.000	0.766
118.00	-28.75	-34.00	0.00	-1917.8	0.00	1917.84	3316.02	788.90	2472.09	2571.60	68.94	-6.093	0.000	0.756
120.00	-28.24	-33.82	0.00	-1849.8	0.00	1849.83	3284.72	778.95	2410.12	2514.88	71.52	-6.226	0.000	0.746
122.00	-27.74	-33.64	0.00	-1782.1	0.00	1782.19	3253.15	769.00	2348.93	2458.58	74.15	-6.358	0.000	0.735
124.00	-27.26	-33.45	0.00	-1714.9	0.00	1714.91	3213.32	759.05	2288.53	2396.73	76.84	-6.491	0.000	0.726
125.00	-27.01	-33.36	0.00	-1681.4	0.00	1681.46	3192.26	754.08	2258.63	2365.26	78.20	-6.558	0.000	0.721
125.00	-27.01	-33.36	0.00	-1681.4	0.00	1681.46	2545.46	629.48	1888.72	1892.56	78.20	-6.558	0.000	0.902
126.00	-26.76	-33.29	0.00	-1648.1	0.00	1648.11	2533.76	625.34	1863.92	1871.35	79.58	-6.625	0.000	0.894
128.00	-26.32	-33.13	0.00	-1581.5	0.00	1581.53	2510.17	617.05	1814.81	1829.12	82.38	-6.783	0.000	0.878
130.00	-25.88	-32.96	0.00	-1515.2	0.00	1515.28	2486.30	608.75	1766.36	1787.17	85.25	-6.941	0.000	0.861
132.00	-25.16	-32.76	0.00	-1449.3	0.00	1449.36	2462.17	600.46	1718.57	1745.51	88.19	-7.098	0.000	0.844
134.00	-24.48	-32.53	0.00	-1383.8	0.00	1383.85	2437.77	592.17	1671.43	1704.13	91.19	-7.255	0.000	0.825
135.00	-24.12	-32.43	0.00	-1351.3	0.00	1351.32	2457.60	598.90	1709.65	1737.70	92.71	-7.334	0.000	0.790
136.00	-23.89	-32.36	0.00	-1318.8	0.00	1318.89	2445.41	594.76	1686.06	1717.00	94.25	-7.412	0.000	0.781
138.00	-23.47	-32.18	0.00	-1254.1	0.00	1254.18	2420.82	586.46	1639.37	1675.83	97.38	-7.559	0.000	0.761
140.00	-23.06	-32.00	0.00	-1189.8	0.00	1189.83	2395.97	578.17	1593.34	1634.95	100.57	-7.704	0.000	0.740
140.00	-23.06	-32.00	0.00	-1189.8	0.00	1189.83	1788.19	463.41	1279.47	1224.81	100.57	-7.704	0.000	0.989
142.00	-22.69	-31.83	0.00	-1125.8	0.00	1125.83	1771.85	456.77	1243.10	1196.12	103.82	-7.847	0.000	0.959
144.00	-22.32	-31.69	0.00	-1062.1	0.00	1062.16	1755.23	450.14	1207.26	1167.57	107.14	-8.023	0.000	0.927
146.00	-21.96	-31.54	0.00	-998.79	0.00	998.79	1738.36	443.51	1171.94	1139.16	110.52	-8.196	0.000	0.894
148.00	-21.60	-31.38	0.00	-935.73	0.00	935.73	1721.21	436.87	1137.14	1110.92	113.98	-8.366	0.000	0.860
150.00	-21.25	-31.23	0.00	-872.96	0.00	872.96	1703.79	430.24	1102.87	1082.85	117.51	-8.533	0.000	0.824
152.00	-20.90	-31.08	0.00	-810.50	0.00	810.50	1686.10	423.60	1069.12	1054.96	121.11	-8.695	0.000	0.786
154.00	-20.56	-30.92	0.00	-748.34	0.00	748.34	1668.15	416.97	1035.89	1027.24	124.77	-8.852	0.000	0.746
156.00	-20.23	-30.77	0.00	-686.49	0.00	686.49	1649.92	410.34	1003.19	999.72	128.50	-9.003	0.000	0.705
158.00	-19.91	-30.61	0.00	-624.96	0.00	624.96	1631.43	403.70	971.02	972.40	132.29	-9.149	0.000	0.661
160.00	-19.59	-30.46	0.00	-563.73	0.00	563.73	1612.67	397.07	939.37	945.29	136.13	-9.287	0.000	0.614
162.00	-19.28	-30.30	0.00	-502.82	0.00	502.82	1593.64	390.43	908.24	918.39	140.04	-9.418	0.000	0.566
164.00	-18.99	-30.13	0.00	-442.23	0.00	442.23	1574.34	383.80	877.64	891.72	143.99	-9.540	0.000	0.514
165.00	-12.87	-21.06	0.00	-412.11	0.00	412.11	1564.59	380.48	862.54	878.47	145.99	-9.598	0.000	0.480
166.00	-12.73	-20.98	0.00	-391.05	0.00	391.05	1554.77	377.17	847.56	865.27	147.99	-9.653	0.000	0.463
168.00	-12.49	-20.81	0.00	-349.10	0.00	349.10	1534.93	370.53	818.01	839.07	152.04	-9.759	0.000	0.427
170.00	-12.26	-20.64	0.00	-307.48	0.00	307.48	1514.83	363.90	788.98	813.12	156.13	-9.858	0.000	0.389
172.00	-12.03	-20.47	0.00	-266.20	0.00	266.20	1494.45	357.26	760.48	787.42	160.26	-9.949	0.000	0.349
174.00	-11.81	-20.30	0.00	-225.26	0.00	225.26	1473.81	350.63	732.50	761.98	164.43	-10.032	0.000	0.307
175.00	-9.16	-14.59	0.00	-204.95	0.00	204.95	1463.38	347.31	718.70	749.37	166.52	-10.070	0.000	0.282
176.00	-9.05	-14.51	0.00	-190.36	0.00	190.36	1452.89	344.00	705.04	736.82	168.63	-10.106	0.000	0.266
178.00	-8.85	-14.34	0.00	-161.34	0.00	161.34	1428.17	337.36	678.11	710.17	172.85	-10.172	0.000	0.235
180.00	-8.69	-14.03	0.00	-132.66	0.00	132.66	1400.09	330.73	651.70	682.38	177.11	-10.231	0.000	0.202
180.00	-8.69	-14.03	0.00	-132.66	0.00	132.66	678.42	203.53	25205.7	396.30	177.11	-10.231	0.000	0.352
182.00	-8.51	-13.72	0.00	-104.60	0.00	104.60	678.42	203.53	25205.7	396.30	181.38	-10.281	0.000	0.281
184.00	-8.30	-13.57	0.00	-77.16	0.00	77.16	678.42	203.53	25205.7	396.30	185.67	-10.316	0.000	0.211

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H
Site Name:	North Salem	**Exposure:**	B
Height:	195.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

4/4/2023

Tower Engineering Solutions

185.00	-4.42	-6.65	0.00	-63.59	0.00	63.59	678.42	203.53	25205.7	396.30	187.82	-10.330	0.000	0.168
186.00	-4.34	-6.58	0.00	-56.94	0.00	56.94	678.42	203.53	25205.7	396.30	189.98	-10.342	0.000	0.151
188.00	-4.18	-6.44	0.00	-43.78	0.00	43.78	678.42	203.53	25205.7	396.30	194.29	-10.361	0.000	0.118
190.00	-4.02	-6.30	0.00	-30.90	0.00	30.90	678.42	203.53	25205.7	396.30	198.61	-10.376	0.000	0.085
192.00	-3.86	-6.15	0.00	-18.31	0.00	18.31	678.42	203.53	25205.7	396.30	202.93	-10.385	0.000	0.053
194.00	-3.71	-6.01	0.00	-6.01	0.00	6.01	678.42	203.53	25205.7	396.30	207.26	-10.390	0.000	0.021
195.00	0.00	-5.24	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	209.43	-10.390	0.000	0.001

Wind Loading - Shaft

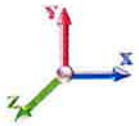
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 31

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	25.445	27.99	558.28	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	25.445	27.99	554.15	0.772 *	0.000	2.00	10.876	8.40	235.0	0.0	542.8
4.00		1.00	0.70	25.445	27.99	550.03	0.774 *	0.000	2.00	10.795	8.36	233.9	0.0	538.8
6.00		1.00	0.70	25.445	27.99	545.91	0.776 *	0.000	2.00	10.714	8.31	232.7	0.0	534.7
8.00		1.00	0.70	25.445	27.99	541.78	0.778 *	0.000	2.00	10.634	8.27	231.6	0.0	530.7
10.00		1.00	0.70	25.445	27.99	537.66	0.780 *	0.000	2.00	10.553	8.23	230.4	0.0	526.6
12.00		1.00	0.70	25.445	27.99	533.54	0.782 *	0.000	2.00	10.472	8.19	229.3	0.0	522.6
14.00		1.00	0.70	25.445	27.99	529.41	0.784 *	0.000	2.00	10.392	8.15	228.1	0.0	518.5
16.00		1.00	0.70	25.445	27.99	525.29	0.786 *	0.000	2.00	10.311	8.11	227.0	0.0	514.5
18.00		1.00	0.70	25.445	27.99	521.17	0.789 *	0.000	2.00	10.231	8.07	225.8	0.0	510.4
20.00		1.00	0.70	25.445	27.99	517.04	0.791 *	0.000	2.00	10.150	8.03	224.7	0.0	506.4
22.00		1.00	0.70	25.445	27.99	512.92	0.793 *	0.000	2.00	10.069	7.99	223.5	0.0	502.3
24.00		1.00	0.70	25.445	27.99	508.80	0.795 *	0.000	2.00	9.989	7.94	222.3	0.0	498.3
26.00		1.00	0.70	25.445	27.99	504.67	0.798 *	0.000	2.00	9.908	7.90	221.2	0.0	494.2
28.00		1.00	0.70	25.445	27.99	500.55	0.800 *	0.000	2.00	9.827	7.86	220.0	0.0	490.2
30.00		1.00	0.70	25.467	28.01	496.64	0.802 *	0.000	2.00	9.747	7.82	219.1	0.0	486.1
32.00		1.00	0.71	25.941	28.53	497.07	0.805 *	0.000	2.00	9.666	7.78	222.0	0.0	482.1
34.00		1.00	0.73	26.394	29.03	497.20	0.807 *	0.000	2.00	9.586	7.74	224.7	0.0	478.0
36.00		1.00	0.74	26.829	29.51	497.04	0.810 *	0.000	2.00	9.505	7.70	227.1	0.0	473.9
38.00		1.00	0.75	27.246	29.97	496.63	0.812 *	0.000	2.00	9.424	7.66	229.4	0.0	469.9
40.00		1.00	0.76	27.649	30.41	495.98	0.815 *	0.000	2.00	9.344	7.61	231.6	0.0	465.8
41.00	Bot - Section 2	1.00	0.77	27.844	30.63	495.58	0.817 *	0.000	1.00	4.642	3.79	116.1	0.0	231.4
42.00		1.00	0.77	28.037	30.84	495.12	0.818 *	0.000	1.00	4.695	3.84	118.5	0.0	464.5
44.00		1.00	0.78	28.412	31.25	494.07	0.820 *	0.000	2.00	9.331	7.65	239.2	0.0	922.9
46.00		1.00	0.79	28.775	31.65	492.83	0.823 *	0.000	2.00	9.250	7.61	241.0	0.0	914.8
48.00	Top - Section 1	1.00	0.80	29.127	32.04	491.42	0.826 *	0.000	2.00	9.169	7.57	242.6	0.0	906.7
50.00		1.00	0.81	29.469	32.42	498.01	0.823 *	0.000	2.00	9.089	7.48	242.6	0.0	453.0
52.00		1.00	0.82	29.801	32.78	496.35	0.826 *	0.000	2.00	9.008	7.44	244.0	0.0	449.0
54.00		1.00	0.83	30.124	33.14	494.54	0.829 *	0.000	2.00	8.927	7.40	245.3	0.0	444.9
56.00		1.00	0.84	30.439	33.48	492.61	0.754 *	0.000	2.00	8.847	6.67	223.3	0.0	440.9
58.00		1.00	0.85	30.745	33.82	490.55	0.730	0.000	2.00	8.766	6.40	216.4	0.0	436.8
60.00		1.00	0.85	31.045	34.15	488.38	0.730	0.000	2.00	8.686	6.34	216.5	0.0	432.8
62.00		1.00	0.86	31.337	34.47	486.10	0.730	0.000	2.00	8.605	6.28	216.5	0.0	428.7
64.00		1.00	0.87	31.622	34.78	483.71	0.730	0.000	2.00	8.524	6.22	216.5	0.0	424.7
66.00		1.00	0.88	31.902	35.09	481.22	0.730	0.000	2.00	8.444	6.16	216.3	0.0	420.6
68.00		1.00	0.89	32.175	35.39	478.64	0.730	0.000	2.00	8.363	6.11	216.1	0.0	416.6
70.00		1.00	0.89	32.442	35.69	475.97	0.730	0.000	2.00	8.282	6.05	215.8	0.0	412.5
72.00		1.00	0.90	32.705	35.97	473.22	0.730	0.000	2.00	8.202	5.99	215.4	0.0	408.5
74.00		1.00	0.91	32.962	36.26	470.38	0.730	0.000	2.00	8.121	5.93	215.0	0.0	404.4
76.00		1.00	0.91	33.214	36.54	467.47	0.730	0.000	2.00	8.041	5.87	214.4	0.0	400.4
78.00		1.00	0.92	33.461	36.81	464.48	0.730	0.000	2.00	7.960	5.81	213.9	0.0	396.3
80.00		1.00	0.93	33.704	37.07	461.41	0.730	0.000	2.00	7.879	5.75	213.2	0.0	392.3
82.00		1.00	0.93	33.943	37.34	458.28	0.730	0.000	2.00	7.799	5.69	212.6	0.0	388.2
84.00		1.00	0.94	34.177	37.59	455.08	0.730	0.000	2.00	7.718	5.63	211.8	0.0	384.1
85.00	Bot - Section 3	1.00	0.94	34.293	37.72	453.46	0.730	0.000	1.00	3.829	2.80	105.4	0.0	190.6
86.00		1.00	0.95	34.408	37.85	451.82	0.730	0.000	1.00	3.883	2.83	107.3	0.0	382.8
88.00		1.00	0.95	34.634	38.10	448.50	0.730	0.000	2.00	7.705	5.62	214.3	0.0	759.5

Wind Loading - Shaft

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II
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90.00	1.00	0.96	34.858	38.34	445.11	0.730	0.000	2.00	7.624	5.57	213.4	0.0	751.4
91.00 Top - Section 2	1.00	0.96	34.968	38.46	443.40	0.730	0.000	1.00	3.782	2.76	106.2	0.0	372.7
92.00	1.00	0.96	35.077	38.58	450.56	0.730	0.000	1.00	3.762	2.75	106.0	0.0	187.2
93.00 Top - Section 3	1.00	0.97	35.186	38.70	448.83	0.730	0.000	1.00	3.742	2.73	105.7	0.0	186.2
94.00	1.00	0.97	35.293	38.82	447.09	0.730	0.000	1.00	3.721	2.72	105.5	0.0	158.9
96.00	1.00	0.98	35.506	39.06	443.57	0.730	0.000	2.00	7.382	5.39	210.5	0.0	315.3
98.00	1.00	0.98	35.716	39.29	439.99	0.730	0.000	2.00	7.302	5.33	209.4	0.0	311.8
100.00	1.00	0.99	35.923	39.52	436.36	0.730	0.000	2.00	7.221	5.27	208.3	0.0	308.3
102.00	1.00	0.99	36.127	39.74	432.69	0.730	0.000	2.00	7.141	5.21	207.1	0.0	304.8
104.00	1.00	1.00	36.328	39.96	428.96	0.730	0.000	2.00	7.060	5.15	205.9	0.0	301.4
106.00	1.00	1.00	36.526	40.18	425.19	0.730	0.000	2.00	6.979	5.09	204.7	0.0	297.9
108.00	1.00	1.01	36.721	40.39	421.37	0.730	0.000	2.00	6.899	5.04	203.4	0.0	294.4
110.00	1.00	1.02	36.914	40.61	417.51	0.730	0.000	2.00	6.818	4.98	202.1	0.0	291.0
112.00	1.00	1.02	37.105	40.82	413.61	0.730	0.000	2.00	6.737	4.92	200.7	0.0	287.5
114.00	1.00	1.03	37.293	41.02	409.67	0.730	0.000	2.00	6.657	4.86	199.3	0.0	284.0
116.00	1.00	1.03	37.479	41.23	405.68	0.733 *	0.000	2.00	6.576	4.82	198.7	0.0	280.5
118.00	1.00	1.04	37.662	41.43	401.66	0.736 *	0.000	2.00	6.496	4.78	198.0	0.0	277.1
120.00	1.00	1.04	37.844	41.63	397.59	0.739 *	0.000	2.00	6.415	4.74	197.2	0.0	273.6
122.00	1.00	1.05	38.023	41.83	393.49	0.741 *	0.000	2.00	6.334	4.70	196.4	0.0	270.1
124.00	1.00	1.05	38.200	42.02	389.36	0.744 *	0.000	2.00	6.254	4.66	195.6	0.0	266.6
125.00 Top - Section 4	1.00	1.05	38.288	42.12	387.27	0.747 *	0.000	1.00	3.097	2.31	97.4	0.0	132.0
126.00	1.00	1.06	38.375	42.21	385.18	0.748 *	0.000	1.00	3.076	2.30	97.2	0.0	109.5
128.00	1.00	1.06	38.548	42.40	380.98	0.751 *	0.000	2.00	6.092	4.57	193.9	0.0	216.8
130.00 Bot - Section 6	1.00	1.07	38.719	42.59	376.73	0.754 *	0.000	2.00	6.012	4.53	193.0	0.0	213.9
132.00	1.00	1.07	38.888	42.78	372.46	0.757 *	0.000	2.00	6.037	4.57	195.5	0.0	425.8
134.00	1.00	1.07	39.056	42.96	368.15	0.761 *	0.000	2.00	5.956	4.53	194.6	0.0	420.0
135.00 Top - Section 5	1.00	1.08	39.139	43.05	365.99	0.763 *	0.000	1.00	2.948	2.25	96.9	0.0	207.8
136.00	1.00	1.08	39.221	43.14	370.53	0.760 *	0.000	1.00	2.928	2.23	96.0	0.0	104.1
138.00	1.00	1.08	39.385	43.32	366.17	0.763 *	0.000	2.00	5.795	4.42	191.5	0.0	206.1
140.00 Top - Section 6	1.00	1.09	39.548	43.50	361.79	0.766 *	0.000	2.00	5.714	4.38	190.5	0.0	203.2
142.00	1.00	1.09	39.708	43.68	357.37	0.770 *	0.000	2.00	5.634	4.34	189.5	0.0	160.6
144.00	1.00	1.10	39.867	43.85	352.92	0.730	0.000	2.00	5.553	4.05	177.8	0.0	158.3
146.00	1.00	1.10	40.025	44.03	348.45	0.730	0.000	2.00	5.473	4.00	175.9	0.0	155.9
148.00	1.00	1.11	40.181	44.20	343.94	0.730	0.000	2.00	5.392	3.94	174.0	0.0	153.6
150.00	1.00	1.11	40.335	44.37	339.41	0.730	0.000	2.00	5.311	3.88	172.0	0.0	151.3
152.00	1.00	1.11	40.488	44.54	334.85	0.730	0.000	2.00	5.231	3.82	170.1	0.0	149.0
154.00	1.00	1.12	40.639	44.70	330.27	0.730	0.000	2.00	5.150	3.76	168.1	0.0	146.7
156.00	1.00	1.12	40.790	44.87	325.66	0.730	0.000	2.00	5.069	3.70	166.0	0.0	144.4
158.00	1.00	1.13	40.938	45.03	321.02	0.730	0.000	2.00	4.989	3.64	164.0	0.0	142.1
160.00	1.00	1.13	41.086	45.19	316.36	0.730	0.000	2.00	4.908	3.58	161.9	0.0	139.7
162.00	1.00	1.13	41.232	45.35	311.67	0.730	0.000	2.00	4.828	3.52	159.8	0.0	137.4
164.00	1.00	1.14	41.377	45.51	306.96	0.730	0.000	2.00	4.747	3.47	157.7	0.0	135.1
165.00 Appurtenance(s)	1.00	1.14	41.448	45.59	304.59	0.730	0.000	1.00	2.343	1.71	78.0	0.0	66.7
166.00	1.00	1.14	41.520	45.67	302.22	0.730	0.000	1.00	2.323	1.70	77.5	0.0	66.1
168.00	1.00	1.15	41.662	45.83	297.47	0.730	0.000	2.00	4.586	3.35	153.4	0.0	130.5
170.00	1.00	1.15	41.804	45.98	292.68	0.730	0.000	2.00	4.505	3.29	151.2	0.0	128.2
172.00	1.00	1.15	41.943	46.14	287.88	0.730	0.000	2.00	4.425	3.23	149.0	0.0	125.8
174.00	1.00	1.16	42.082	46.29	283.05	0.730	0.000	2.00	4.344	3.17	146.8	0.0	123.5
175.00 Appurtenance(s)	1.00	1.16	42.151	46.37	280.63	0.730	0.000	1.00	2.142	1.56	72.5	0.0	60.9
176.00	1.00	1.16	42.220	46.44	278.20	0.730	0.000	1.00	2.122	1.55	71.9	0.0	60.3
178.00	1.00	1.17	42.356	46.59	273.33	0.730	0.000	2.00	4.183	3.05	142.3	0.0	118.9
180.00 Top - Section 7	1.00	1.17	42.492	46.74	268.44	1.200 *	0.000	2.00	4.102	4.92	230.1	0.0	116.6
182.00	1.00	1.17	42.626	46.89	264.78	1.200 *	0.000	2.00	4.000	4.80	225.1	0.0	128.3
184.00	1.00	1.18	42.759	47.04	265.19	0.600	0.000	2.00	4.000	2.40	112.9	0.0	128.3
185.00 Appurtenance(s)	1.00	1.18	42.826	47.11	265.40	0.600	0.000	1.00	2.000	1.20	56.5	0.0	64.1
186.00	1.00	1.18	42.892	47.18	265.60	0.600	0.000	1.00	2.000	1.20	56.6	0.0	64.1
188.00	1.00	1.18	43.023	47.33	266.01	0.600	0.000	2.00	4.000	2.40	113.6	0.0	128.3

Wind Loading - Shaft

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Tower Engineering Solutions

190.00	1.00	1.19	43.153	47.47	266.41	0.600	0.000	2.00	4.000	2.40	113.9	0.0	128.3
192.00	1.00	1.19	43.283	47.61	266.81	0.600	0.000	2.00	4.000	2.40	114.3	0.0	128.3
194.00	1.00	1.19	43.411	47.75	267.21	0.600	0.000	2.00	4.000	2.40	114.6	0.0	128.3
195.00 Appurtenance(s)	1.00	1.20	43.475	47.82	267.40	0.600	0.000	1.00	2.000	1.20	57.4	0.0	64.1
							Totals:	**195.00**			**19,384.7**		**34,388.2**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

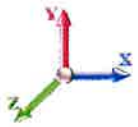
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 31

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	HRK12 (Handrail Kit)	1	43.475	47.822	1.00	1.00	6.75	235.55	0.000	0.000	322.80	0.00	0.00
2	195.00	Low Profile	1	43.475	47.822	1.00	1.00	26.00	1620.00	0.000	0.000	1243.38	0.00	0.00
3	195.00	PRK-1245 (kicker kit)	1	43.475	47.822	1.00	1.00	9.50	418.42	0.000	0.000	454.31	0.00	0.00
4	195.00	(3) SFS-H-L (V-Braces)	1	43.475	47.822	1.00	1.00	6.70	207.00	0.000	0.000	320.41	0.00	0.00
5	195.00	TD-RRH8x20-25	3	43.475	47.822	0.50	1.00	6.07	189.00	0.000	0.000	290.52	0.00	0.00
6	195.00	NNVV-65B-R4	3	43.475	47.822	0.73	1.00	26.87	208.98	0.000	0.000	1285.05	0.00	0.00
7	195.00	1900MHz RRH (65MHz)	3	43.475	47.822	0.50	1.00	4.16	162.00	0.000	0.000	198.70	0.00	0.00
8	195.00	800 MHz RRH	6	43.475	47.822	0.50	1.00	7.47	286.20	0.000	0.000	357.23	0.00	0.00
9	195.00	APXVTM14-C-I20	3	43.475	47.822	0.78	1.00	14.84	151.74	0.000	0.000	709.47	0.00	0.00
10	185.00	(3) SitePro 1 PRK-SFS-L	1	42.826	47.108	0.80	0.80	5.36	207.00	0.000	0.000	252.50	0.00	0.00
11	185.00	Powerwave LGP21903	6	42.826	47.108	0.40	0.80	0.65	29.70	0.000	0.000	30.53	0.00	0.00
12	185.00	Sector Frames	1	42.826	47.108	1.00	1.00	22.00	1350.00	0.000	0.000	1036.38	0.00	0.00
13	185.00	Cci DMP65R-BU8DA	6	42.826	47.108	0.58	0.80	62.62	518.40	0.000	0.000	2949.76	0.00	0.00
14	185.00	Ericsson RRUS 4478 B14	3	42.826	47.108	0.40	0.80	2.21	161.73	0.000	0.000	104.02	0.00	0.00
15	185.00	(3) SitePro 1 SFS-L with	1	42.826	47.108	0.80	0.80	8.00	462.60	0.000	0.000	376.87	0.00	0.00
16	185.00	(3) SitePro 1 HRK14-3HD	1	42.826	47.108	0.80	0.80	7.80	365.95	0.000	0.000	367.44	0.00	0.00
17	185.00	Ericsson RRUS 8843 B2	3	42.826	47.108	0.40	0.80	1.97	194.40	0.000	0.000	92.71	0.00	0.00
18	185.00	Raycap DC6-48-60-18-8F	1	42.826	47.108	0.40	0.80	0.37	28.62	0.000	0.000	17.34	0.00	0.00
19	185.00	Powerwave LGP21401	6	42.826	47.108	0.40	0.80	3.10	76.14	0.000	0.000	145.85	0.00	0.00
20	185.00	Powerwave 7770	3	42.826	47.108	0.58	0.80	9.64	94.50	0.000	0.000	453.94	0.00	0.00
21	185.00	Raycap	1	42.826	47.108	0.40	0.80	1.91	14.40	0.000	0.000	90.07	0.00	0.00
22	185.00	Raycap DC6-48-60-18-8C	1	42.826	47.108	0.40	0.80	0.50	18.00	0.000	0.000	23.74	0.00	0.00
23	185.00	Ericsson 4449 B5/B12	3	42.826	47.108	0.40	0.80	2.36	191.70	0.000	0.000	111.36	0.00	0.00
24	175.00	Ericsson 4449 B71 + B85	3	42.151	46.366	0.54	0.80	3.17	191.70	0.000	0.000	146.88	0.00	0.00
25	175.00	RFS	3	42.151	46.366	0.50	0.80	9.61	109.89	0.000	0.000	445.69	0.00	0.00
26	175.00	RFS	3	42.151	46.366	0.56	0.80	34.00	331.56	0.000	0.000	1576.60	0.00	0.00
27	175.00	Commscope	3	42.151	46.366	0.64	0.80	22.02	134.46	0.000	0.000	1021.10	0.00	0.00
28	175.00	Platform w/ Hand Rail	1	42.151	46.366	1.00	1.00	32.00	1440.00	0.000	0.000	1483.72	0.00	0.00
29	175.00	Ericsson RRUS11 B2	6	42.151	46.366	0.40	0.80	6.05	273.24	0.000	0.000	280.42	0.00	0.00
30	175.00	Ericsson RRUS11 B4	3	42.151	46.366	0.40	0.80	3.02	136.62	0.000	0.000	140.21	0.00	0.00
31	165.00	BSAMNT-SBS-1-2	3	41.448	45.593	0.56	0.75	0.00	69.12	0.000	0.000	0.00	0.00	0.00
32	165.00	RMQLP-4096-HK Plat. +	1	41.448	45.593	1.00	1.00	51.70	2529.05	0.000	0.000	2357.17	0.00	0.00
33	165.00	Raycap	9	41.448	45.593	0.38	0.75	13.70	259.20	0.000	0.000	624.74	0.00	0.00
34	165.00	B5/B13 RRH-BR04C	12	41.448	45.593	0.38	0.75	8.42	759.24	0.000	0.000	383.67	0.00	0.00
35	165.00	B2/B66A RRH-BR049	12	41.448	45.593	0.38	0.75	8.42	911.52	0.000	0.000	383.67	0.00	0.00
36	165.00	Samsung MT6407-77A	6	41.448	45.593	0.52	0.75	14.77	428.76	0.000	0.000	673.57	0.00	0.00
37	165.00	Commscope	15	41.448	45.593	0.62	0.75	75.45	589.27	0.000	0.000	3439.88	0.00	0.00
							Totals:		**15,355.66**			**24,191.70**		

Total Applied Force Summary

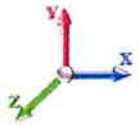
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 31

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		235.03	610.09	0.00	0.00
4.00		233.88	606.04	0.00	0.00
6.00		232.73	601.99	0.00	0.00
8.00		231.57	597.94	0.00	0.00
10.00		230.42	593.89	0.00	0.00
12.00		229.27	589.83	0.00	0.00
14.00		228.12	585.78	0.00	0.00
16.00		226.96	581.73	0.00	0.00
18.00		225.81	577.68	0.00	0.00
20.00		224.66	573.63	0.00	0.00
22.00		223.50	569.58	0.00	0.00
24.00		222.35	565.52	0.00	0.00
26.00		221.20	561.47	0.00	0.00
28.00		220.04	557.42	0.00	0.00
30.00		219.08	553.37	0.00	0.00
32.00		221.98	549.32	0.00	0.00
34.00		224.66	545.27	0.00	0.00
36.00		227.14	541.21	0.00	0.00
38.00		229.44	537.16	0.00	0.00
40.00		231.58	533.11	0.00	0.00
41.00		116.14	265.04	0.00	0.00
42.00		118.49	498.13	0.00	0.00
44.00		239.19	990.19	0.00	0.00
46.00		240.96	982.09	0.00	0.00
48.00		242.60	973.98	0.00	0.00
50.00		242.60	520.29	0.00	0.00
52.00		243.98	516.24	0.00	0.00
54.00		245.26	512.19	0.00	0.00
56.00		223.35	508.14	0.00	0.00
58.00		216.42	504.09	0.00	0.00
60.00		216.52	500.04	0.00	0.00
62.00		216.53	495.98	0.00	0.00
64.00		216.45	491.93	0.00	0.00
66.00		216.30	487.88	0.00	0.00
68.00		216.07	483.83	0.00	0.00
70.00		215.77	479.78	0.00	0.00
72.00		215.39	475.73	0.00	0.00
74.00		214.95	471.67	0.00	0.00
76.00		214.45	467.62	0.00	0.00
78.00		213.88	463.57	0.00	0.00
80.00		213.25	459.52	0.00	0.00
82.00		212.56	455.47	0.00	0.00
84.00		211.82	451.42	0.00	0.00
85.00		105.43	224.19	0.00	0.00
86.00		107.28	416.44	0.00	0.00
88.00		214.28	826.80	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

90.00		213.41	818.70	0.00	0.00
91.00		106.19	406.31	0.00	0.00
92.00		105.96	220.82	0.00	0.00
93.00		105.72	219.81	0.00	0.00
94.00		105.47	192.57	0.00	0.00
96.00		210.48	382.53	0.00	0.00
98.00		209.42	379.06	0.00	0.00
100.00		208.30	375.59	0.00	0.00
102.00		207.14	372.12	0.00	0.00
104.00		205.95	368.64	0.00	0.00
106.00		204.70	365.17	0.00	0.00
108.00		203.42	361.70	0.00	0.00
110.00		202.10	358.22	0.00	0.00
112.00		200.74	354.75	0.00	0.00
114.00		199.35	351.28	0.00	0.00
116.00		198.73	347.81	0.00	0.00
118.00		198.00	344.33	0.00	0.00
120.00		197.23	340.86	0.00	0.00
122.00		196.45	337.39	0.00	0.00
124.00		195.63	333.91	0.00	0.00
125.00		97.39	165.65	0.00	0.00
126.00		97.18	143.12	0.00	0.00
128.00		193.92	284.06	0.00	0.00
130.00		193.02	281.17	0.00	0.00
132.00		195.53	493.08	0.00	0.00
134.00		194.62	487.29	0.00	0.00
135.00		96.86	241.48	0.00	0.00
136.00		96.04	137.78	0.00	0.00
138.00		191.55	273.39	0.00	0.00
140.00		190.54	270.50	0.00	0.00
142.00		189.52	227.84	0.00	0.00
144.00		177.78	225.52	0.00	0.00
146.00		175.89	223.21	0.00	0.00
148.00		173.97	220.89	0.00	0.00
150.00		172.03	218.58	0.00	0.00
152.00		170.06	216.26	0.00	0.00
154.00		168.07	213.95	0.00	0.00
156.00		166.05	211.63	0.00	0.00
158.00		164.00	209.32	0.00	0.00
160.00		161.93	207.00	0.00	0.00
162.00		159.84	204.69	0.00	0.00
164.00		157.72	202.37	0.00	0.00
165.00	(58) attachments	7940.69	5646.48	0.00	0.00
166.00		77.45	88.51	0.00	0.00
168.00		153.42	175.28	0.00	0.00
170.00		151.23	172.96	0.00	0.00
172.00		149.02	170.65	0.00	0.00
174.00		146.79	168.33	0.00	0.00
175.00	(22) attachments	5167.12	2700.77	0.00	0.00
176.00		71.93	79.88	0.00	0.00
178.00		142.26	158.02	0.00	0.00
180.00		288.97	155.71	0.00	0.00
182.00		284.15	167.38	0.00	0.00
184.00		112.89	167.38	0.00	0.00
185.00	(37) attachments	6109.03	3796.83	0.00	0.00
186.00		56.62	67.56	0.00	0.00
188.00		113.58	135.12	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

190.00		113.92	135.12	0.00	0.00
192.00		114.27	135.12	0.00	0.00
194.00		114.60	135.12	0.00	0.00
195.00	(22) attachments	5239.26	3546.45	0.00	0.00
	Totals:	**43,694.42**	**55,747.26**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

TES Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00

Iterations 31

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.119	1.058	25.445	0.00	0.00
2.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.119	1.058	25.445	0.00	0.00
4.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.120	1.060	25.445	0.00	0.00
4.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.120	1.060	25.445	0.00	0.00
6.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.121	1.063	25.445	0.00	0.00
6.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.121	1.063	25.445	0.00	0.00
8.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.122	1.066	25.445	0.00	0.00
8.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.122	1.066	25.445	0.00	0.00
10.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.123	1.069	25.445	0.00	0.00
10.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.123	1.069	25.445	0.00	0.00
12.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.124	1.071	25.445	0.00	0.00
12.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.124	1.071	25.445	0.00	0.00
14.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.125	1.074	25.445	0.00	0.00
14.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.125	1.074	25.445	0.00	0.00
16.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.126	1.077	25.445	0.00	0.00
16.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.126	1.077	25.445	0.00	0.00
18.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.127	1.080	25.445	0.00	0.00
18.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.127	1.080	25.445	0.00	0.00
20.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.128	1.083	25.445	0.00	0.00
20.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.128	1.083	25.445	0.00	0.00
22.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.129	1.086	25.445	0.00	0.00
22.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.129	1.086	25.445	0.00	0.00
24.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.130	1.089	25.445	0.00	0.00
24.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.130	1.089	25.445	0.00	0.00
26.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.131	1.093	25.445	0.00	0.00
26.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.131	1.093	25.445	0.00	0.00
28.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.132	1.096	25.445	0.00	0.00
28.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.132	1.096	25.445	0.00	0.00
30.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.133	1.099	25.467	0.00	0.00
30.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.133	1.099	25.467	0.00	0.00
32.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.134	1.102	25.941	0.00	0.00
32.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.134	1.102	25.941	0.00	0.00
34.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.135	1.106	26.394	0.00	0.00
34.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.135	1.106	26.394	0.00	0.00
36.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.136	1.109	26.829	0.00	0.00
36.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.136	1.109	26.829	0.00	0.00
38.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.138	1.113	27.246	0.00	0.00
38.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.138	1.113	27.246	0.00	0.00
40.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.139	1.116	27.649	0.00	0.00
40.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.139	1.116	27.649	0.00	0.00
41.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.140	1.119	27.844	0.00	0.00
41.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.140	1.119	27.844	0.00	0.00
42.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.140	1.121	28.037	0.00	0.00
42.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.140	1.121	28.037	0.00	0.00
44.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.141	1.124	28.412	0.00	0.00
44.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.141	1.124	28.412	0.00	0.00
46.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.142	1.127	28.775	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

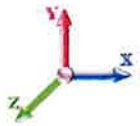
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 31

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
46.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.142	1.127	28.775	0.00	0.00
48.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.144	1.131	29.127	0.00	0.00
48.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.144	1.131	29.127	0.00	0.00
50.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.143	1.128	29.469	0.00	0.00
50.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.143	1.128	29.469	0.00	0.00
52.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.144	1.132	29.801	0.00	0.00
52.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.144	1.132	29.801	0.00	0.00
54.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.145	1.136	30.124	0.00	0.00
54.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.145	1.136	30.124	0.00	0.00
56.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.111	1.033	30.439	0.00	0.00
56.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.111	1.033	30.439	0.00	0.00
58.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.076	0.000	30.745	0.00	0.00
60.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.077	0.000	31.045	0.00	0.00
62.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.077	0.000	31.337	0.00	0.00
64.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.078	0.000	31.622	0.00	0.00
66.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.079	0.000	31.902	0.00	0.00
68.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.080	0.000	32.175	0.00	0.00
70.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.080	0.000	32.442	0.00	0.00
72.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.081	0.000	32.705	0.00	0.00
74.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.082	0.000	32.962	0.00	0.00
76.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.083	0.000	33.214	0.00	0.00
78.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.084	0.000	33.461	0.00	0.00
80.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.085	0.000	33.704	0.00	0.00
82.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.085	0.000	33.943	0.00	0.00
84.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.086	0.000	34.177	0.00	0.00
85.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.087	0.000	34.293	0.00	0.00
86.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.088	0.000	34.408	0.00	0.00
88.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.088	0.000	34.634	0.00	0.00
90.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.089	0.000	34.858	0.00	0.00
91.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.090	0.000	34.968	0.00	0.00
92.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.089	0.000	35.077	0.00	0.00
93.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.089	0.000	35.186	0.00	0.00
94.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.090	0.000	35.293	0.00	0.00
96.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.090	0.000	35.506	0.00	0.00
98.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.091	0.000	35.716	0.00	0.00
100.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.092	0.000	35.923	0.00	0.00
102.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.093	0.000	36.127	0.00	0.00
104.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.094	0.000	36.328	0.00	0.00
106.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.096	0.000	36.526	0.00	0.00
108.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.097	0.000	36.721	0.00	0.00
110.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.098	0.000	36.914	0.00	0.00
112.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.099	0.000	37.105	0.00	0.00
114.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.100	0.000	37.293	0.00	0.00
116.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.101	1.004	37.479	0.00	0.00
118.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.103	1.008	37.662	0.00	0.00
120.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.104	1.012	37.844	0.00	0.00
122.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.105	1.016	38.023	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

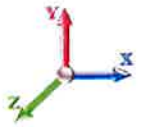
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

TES Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 31

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
124.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.107	1.020	38.200	0.00	0.00
125.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.108	1.023	38.288	0.00	0.00
126.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.108	1.025	38.375	0.00	0.00
128.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.109	1.028	38.548	0.00	0.00
130.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.111	1.033	38.719	0.00	0.00
132.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.112	1.037	38.888	0.00	0.00
134.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.114	1.042	39.056	0.00	0.00
135.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.115	1.045	39.139	0.00	0.00
136.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.114	1.042	39.221	0.00	0.00
138.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.115	1.045	39.385	0.00	0.00
140.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.117	1.050	39.548	0.00	0.00
142.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.118	1.055	39.708	0.00	0.00
144.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.060	0.000	39.867	0.00	0.00
178.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.26	0.00	0.063	0.000	42.356	0.00	0.00
180.00	(3) Bypass Stiffeners	Yes	2.00	0.600	12.60	2.10	1.26	0.512	0.000	42.492	58.89	0.00
182.00	(3) Bypass Stiffeners	Yes	2.00	0.600	12.60	2.10	1.26	0.525	0.000	42.626	59.08	0.00
184.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.26	0.00	0.066	0.000	42.759	0.00	0.00
										Totals:	**118.0**	**0.0**

Calculated Forces

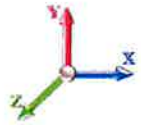
Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 123 mph Wind
Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 31

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-55.72	-43.73	0.00	-6419.1	0.00	6419.18	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.849
2.00	-55.05	-43.57	0.00	-6331.7	0.00	6331.71	5777.89	1549.56	8174.96	7566.71	0.02	-0.079	0.000	0.847
4.00	-54.38	-43.41	0.00	-6244.5	0.00	6244.57	5752.42	1537.95	8052.92	7476.52	0.07	-0.158	0.000	0.845
6.00	-53.72	-43.25	0.00	-6157.7	0.00	6157.74	5726.67	1526.34	7931.81	7386.49	0.15	-0.238	0.000	0.844
8.00	-53.06	-43.10	0.00	-6071.2	0.00	6071.23	5700.65	1514.73	7811.61	7296.62	0.27	-0.319	0.000	0.842
10.00	-52.41	-42.94	0.00	-5985.0	0.00	5985.05	5674.37	1503.12	7692.32	7206.92	0.42	-0.400	0.000	0.841
12.00	-51.76	-42.78	0.00	-5899.1	0.00	5899.18	5647.82	1491.51	7573.96	7117.40	0.61	-0.482	0.000	0.839
14.00	-51.11	-42.62	0.00	-5813.6	0.00	5813.62	5620.99	1479.91	7456.51	7028.07	0.83	-0.565	0.000	0.837
16.00	-50.47	-42.46	0.00	-5728.3	0.00	5728.39	5593.90	1468.30	7339.98	6938.94	1.08	-0.649	0.000	0.835
18.00	-49.83	-42.30	0.00	-5643.4	0.00	5643.48	5566.54	1456.69	7224.37	6850.01	1.37	-0.733	0.000	0.834
20.00	-49.20	-42.14	0.00	-5558.8	0.00	5558.88	5538.91	1445.08	7109.68	6761.30	1.70	-0.818	0.000	0.832
22.00	-48.57	-41.98	0.00	-5474.6	0.00	5474.60	5511.02	1433.47	6995.90	6672.80	2.06	-0.904	0.000	0.830
24.00	-47.94	-41.82	0.00	-5390.6	0.00	5390.64	5482.85	1421.86	6883.05	6584.53	2.46	-0.990	0.000	0.828
26.00	-47.32	-41.66	0.00	-5307.0	0.00	5307.00	5454.41	1410.25	6771.11	6496.50	2.89	-1.078	0.000	0.826
28.00	-46.71	-41.50	0.00	-5223.6	0.00	5223.67	5425.71	1398.64	6660.08	6408.72	3.36	-1.166	0.000	0.825
30.00	-46.09	-41.35	0.00	-5140.6	0.00	5140.66	5396.74	1387.03	6549.98	6321.18	3.87	-1.255	0.000	0.823
32.00	-45.48	-41.18	0.00	-5057.9	0.00	5057.97	5367.49	1375.42	6440.79	6233.91	4.41	-1.344	0.000	0.821
34.00	-44.88	-41.02	0.00	-4975.6	0.00	4975.61	5337.98	1363.81	6332.52	6146.90	5.00	-1.435	0.000	0.819
36.00	-44.28	-40.85	0.00	-4893.5	0.00	4893.58	5308.20	1352.20	6225.17	6060.17	5.62	-1.526	0.000	0.817
38.00	-43.68	-40.67	0.00	-4811.8	0.00	4811.89	5278.15	1340.59	6118.74	5973.73	6.28	-1.618	0.000	0.815
40.00	-43.11	-40.48	0.00	-4730.5	0.00	4730.54	5247.84	1328.98	6013.22	5887.58	6.98	-1.711	0.000	0.813
41.00	-42.81	-40.39	0.00	-4690.0	0.00	4690.06	5232.58	1323.18	5960.81	5844.61	7.34	-1.758	0.000	0.812
42.00	-42.27	-40.31	0.00	-4649.6	0.00	4649.67	5217.25	1317.37	5908.62	5801.72	7.71	-1.806	0.000	0.810
44.00	-41.22	-40.11	0.00	-4569.0	0.00	4569.06	5186.39	1305.76	5804.94	5716.18	8.49	-1.900	0.000	0.808
46.00	-40.18	-39.90	0.00	-4488.8	0.00	4488.85	5155.27	1294.16	5702.18	5630.95	9.31	-1.996	0.000	0.806
48.00	-39.15	-39.69	0.00	-4409.0	0.00	4409.05	5181.33	1303.87	5788.10	5702.24	10.16	-2.092	0.000	0.782
50.00	-38.57	-39.49	0.00	-4329.6	0.00	4329.68	5150.16	1292.26	5685.49	5617.06	11.06	-2.189	0.000	0.779
52.00	-38.00	-39.29	0.00	-4250.7	0.00	4250.70	5118.73	1280.65	5583.79	5532.21	12.00	-2.283	0.000	0.777
54.00	-37.44	-39.08	0.00	-4172.1	0.00	4172.13	5087.02	1269.04	5483.02	5447.69	12.98	-2.377	0.000	0.774
56.00	-36.87	-38.90	0.00	-4093.9	0.00	4093.96	5055.04	1257.43	5383.16	5363.51	13.99	-2.472	0.000	0.772
58.00	-36.31	-38.72	0.00	-4016.1	0.00	4016.16	5022.80	1245.82	5284.21	5279.69	15.05	-2.568	0.000	0.769
60.00	-35.76	-38.55	0.00	-3938.7	0.00	3938.71	4990.29	1234.21	5186.19	5196.21	16.14	-2.664	0.000	0.766
62.00	-35.21	-38.37	0.00	-3861.6	0.00	3861.62	4957.51	1222.60	5089.08	5113.11	17.28	-2.762	0.000	0.763
64.00	-34.66	-38.18	0.00	-3784.8	0.00	3784.89	4924.46	1210.99	4992.89	5030.38	18.46	-2.860	0.000	0.760
66.00	-34.12	-38.00	0.00	-3708.5	0.00	3708.53	4891.14	1199.39	4897.62	4948.02	19.68	-2.959	0.000	0.757
68.00	-33.58	-37.82	0.00	-3632.5	0.00	3632.52	4857.55	1187.78	4803.27	4866.06	20.94	-3.059	0.000	0.754
70.00	-33.05	-37.64	0.00	-3556.8	0.00	3556.88	4823.69	1176.17	4709.83	4784.49	22.24	-3.159	0.000	0.751
72.00	-32.52	-37.45	0.00	-3481.6	0.00	3481.61	4789.56	1164.56	4617.32	4703.33	23.59	-3.261	0.000	0.748
74.00	-31.99	-37.27	0.00	-3406.7	0.00	3406.70	4755.17	1152.95	4525.72	4622.58	24.97	-3.363	0.000	0.745
76.00	-31.47	-37.08	0.00	-3332.1	0.00	3332.16	4720.51	1141.34	4435.03	4542.26	26.40	-3.466	0.000	0.741
78.00	-30.96	-36.90	0.00	-3257.9	0.00	3257.99	4685.57	1129.73	4345.27	4462.36	27.88	-3.570	0.000	0.738
80.00	-30.44	-36.71	0.00	-3184.2	0.00	3184.20	4650.37	1118.12	4256.42	4382.90	29.40	-3.675	0.000	0.734
82.00	-29.93	-36.53	0.00	-3110.7	0.00	3110.77	4614.90	1106.51	4168.49	4303.88	30.96	-3.781	0.000	0.730
84.00	-29.45	-36.33	0.00	-3037.7	0.00	3037.72	4579.16	1094.90	4081.48	4225.32	32.56	-3.887	0.000	0.726
85.00	-29.20	-36.23	0.00	-3001.3	0.00	3001.39	4561.19	1089.10	4038.32	4186.21	33.38	-3.941	0.000	0.724
86.00	-28.74	-36.14	0.00	-2965.1	0.00	2965.16	4543.15	1083.29	3995.39	4147.21	34.21	-3.996	0.000	0.722
88.00	-27.86	-35.92	0.00	-2892.8	0.00	2892.88	4506.88	1071.68	3910.21	4069.58	35.91	-4.104	0.000	0.718
90.00	-27.01	-35.69	0.00	-2821.0	0.00	2821.04	4470.33	1060.07	3825.95	3992.42	37.65	-4.213	0.000	0.714

Calculated Forces

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

TES Tower Engineering Solutions

91.00	-26.58	-35.58	0.00	-2785.3	0.00	2785.36	4519.12	1075.59	3938.79	4095.67	38.54	-4.268	0.000	0.687
92.00	-26.33	-35.48	0.00	-2749.7	0.00	2749.78	4500.93	1069.79	3896.39	4056.95	39.44	-4.323	0.000	0.685
93.00	-26.09	-35.38	0.00	-2714.3	0.00	2714.30	4482.67	1063.98	3854.22	4018.35	40.35	-4.376	0.000	0.682
93.00	-26.09	-35.38	0.00	-2714.3	0.00	2714.30	3684.61	913.29	3313.08	3312.42	40.35	-4.376	0.000	0.828
94.00	-25.85	-35.30	0.00	-2678.9	0.00	2678.92	3670.68	908.31	3277.08	3281.76	41.27	-4.428	0.000	0.825
96.00	-25.41	-35.11	0.00	-2608.3	0.00	2608.33	3642.60	898.36	3205.67	3220.68	43.15	-4.550	0.000	0.818
98.00	-24.97	-34.93	0.00	-2538.1	0.00	2538.10	3614.26	888.41	3135.05	3159.91	45.08	-4.672	0.000	0.812
100.00	-24.54	-34.74	0.00	-2468.2	0.00	2468.24	3585.64	878.46	3065.22	3099.48	47.06	-4.795	0.000	0.805
102.00	-24.11	-34.56	0.00	-2398.7	0.00	2398.76	3556.76	868.51	2996.17	3039.38	49.10	-4.919	0.000	0.798
104.00	-23.69	-34.37	0.00	-2329.6	0.00	2329.64	3527.61	858.56	2927.90	2979.62	51.18	-5.044	0.000	0.790
106.00	-23.27	-34.19	0.00	-2260.9	0.00	2260.90	3498.19	848.61	2860.43	2920.21	53.32	-5.169	0.000	0.782
108.00	-22.85	-34.00	0.00	-2192.5	0.00	2192.53	3468.50	838.66	2793.74	2861.17	55.51	-5.294	0.000	0.775
110.00	-22.44	-33.82	0.00	-2124.5	0.00	2124.53	3438.54	828.71	2727.83	2802.49	57.75	-5.421	0.000	0.766
112.00	-22.03	-33.63	0.00	-2056.9	0.00	2056.90	3408.31	818.76	2662.72	2744.18	60.05	-5.547	0.000	0.758
114.00	-21.63	-33.45	0.00	-1989.6	0.00	1989.63	3377.82	808.81	2598.39	2686.26	62.39	-5.674	0.000	0.749
116.00	-21.23	-33.26	0.00	-1922.7	0.00	1922.74	3347.05	798.86	2534.84	2628.73	64.79	-5.802	0.000	0.740
118.00	-20.83	-33.08	0.00	-1856.2	0.00	1856.22	3316.02	788.90	2472.09	2571.60	67.25	-5.930	0.000	0.730
120.00	-20.44	-32.89	0.00	-1790.0	0.00	1790.07	3284.72	778.95	2410.12	2514.88	69.76	-6.058	0.000	0.720
122.00	-20.05	-32.70	0.00	-1724.2	0.00	1724.29	3253.15	769.00	2348.93	2458.58	72.32	-6.186	0.000	0.709
124.00	-19.69	-32.51	0.00	-1658.8	0.00	1658.88	3213.32	759.05	2288.53	2396.73	74.93	-6.314	0.000	0.700
125.00	-19.50	-32.41	0.00	-1626.3	0.00	1626.38	3192.26	754.08	2258.63	2365.26	76.26	-6.379	0.000	0.696
125.00	-19.50	-32.41	0.00	-1626.3	0.00	1626.38	2545.46	629.48	1888.72	1892.56	76.26	-6.379	0.000	0.870
126.00	-19.30	-32.34	0.00	-1593.9	0.00	1593.96	2533.76	625.34	1863.92	1871.35	77.60	-6.444	0.000	0.862
128.00	-18.96	-32.16	0.00	-1529.2	0.00	1529.29	2510.17	617.05	1814.81	1829.12	80.33	-6.597	0.000	0.846
130.00	-18.62	-31.99	0.00	-1464.9	0.00	1464.96	2486.30	608.75	1766.36	1787.17	83.12	-6.749	0.000	0.830
132.00	-18.07	-31.78	0.00	-1400.9	0.00	1400.99	2462.17	600.46	1718.57	1745.51	85.97	-6.902	0.000	0.813
134.00	-17.54	-31.57	0.00	-1337.4	0.00	1337.42	2437.77	592.17	1671.43	1704.13	88.89	-7.053	0.000	0.795
135.00	-17.27	-31.46	0.00	-1305.8	0.00	1305.86	2457.60	598.90	1709.65	1737.70	90.37	-7.129	0.000	0.761
136.00	-17.09	-31.38	0.00	-1274.3	0.00	1274.39	2445.41	594.76	1686.06	1717.00	91.87	-7.205	0.000	0.752
138.00	-16.77	-31.20	0.00	-1211.6	0.00	1211.63	2420.82	586.46	1639.37	1675.83	94.91	-7.347	0.000	0.733
140.00	-16.45	-31.02	0.00	-1149.2	0.00	1149.23	2395.97	578.17	1593.34	1634.95	98.01	-7.487	0.000	0.713
140.00	-16.45	-31.02	0.00	-1149.2	0.00	1149.23	1788.19	463.41	1279.47	1224.81	98.01	-7.487	0.000	0.952
142.00	-16.16	-30.84	0.00	-1087.2	0.00	1087.20	1771.85	456.77	1243.10	1196.12	101.17	-7.625	0.000	0.923
144.00	-15.87	-30.68	0.00	-1025.5	0.00	1025.51	1755.23	450.14	1207.26	1167.57	104.39	-7.795	0.000	0.892
146.00	-15.59	-30.52	0.00	-964.15	0.00	964.15	1738.36	443.51	1171.94	1139.16	107.68	-7.962	0.000	0.860
148.00	-15.31	-30.36	0.00	-903.10	0.00	903.10	1721.21	436.87	1137.14	1110.92	111.04	-8.126	0.000	0.827
150.00	-15.03	-30.20	0.00	-842.38	0.00	842.38	1703.79	430.24	1102.87	1082.85	114.47	-8.287	0.000	0.792
152.00	-14.76	-30.04	0.00	-781.97	0.00	781.97	1686.10	423.60	1069.12	1054.96	117.96	-8.443	0.000	0.755
154.00	-14.50	-29.88	0.00	-721.88	0.00	721.88	1668.15	416.97	1035.89	1027.24	121.52	-8.595	0.000	0.717
156.00	-14.24	-29.72	0.00	-662.12	0.00	662.12	1649.92	410.34	1003.19	999.72	125.14	-8.741	0.000	0.676
158.00	-13.99	-29.56	0.00	-602.67	0.00	602.67	1631.43	403.70	971.02	972.40	128.82	-8.881	0.000	0.634
160.00	-13.74	-29.40	0.00	-543.55	0.00	543.55	1612.67	397.07	939.37	945.29	132.55	-9.015	0.000	0.589
162.00	-13.50	-29.24	0.00	-484.74	0.00	484.74	1593.64	390.43	908.24	918.39	136.34	-9.141	0.000	0.542
164.00	-13.28	-29.07	0.00	-426.26	0.00	426.26	1574.34	383.80	877.64	891.72	140.18	-9.258	0.000	0.492
165.00	-8.97	-20.33	0.00	-397.19	0.00	397.19	1564.59	380.48	862.54	878.47	142.12	-9.314	0.000	0.461
166.00	-8.87	-20.25	0.00	-376.86	0.00	376.86	1554.77	377.17	847.56	865.27	144.07	-9.368	0.000	0.444
168.00	-8.69	-20.09	0.00	-336.35	0.00	336.35	1534.93	370.53	818.01	839.07	148.00	-9.470	0.000	0.409
170.00	-8.51	-19.93	0.00	-296.17	0.00	296.17	1514.83	363.90	788.98	813.12	151.97	-9.565	0.000	0.373
172.00	-8.34	-19.76	0.00	-256.32	0.00	256.32	1494.45	357.26	760.48	787.42	155.98	-9.653	0.000	0.334
174.00	-8.18	-19.60	0.00	-216.80	0.00	216.80	1473.81	350.63	732.50	761.98	160.02	-9.732	0.000	0.293
175.00	-6.38	-14.05	0.00	-197.20	0.00	197.20	1463.38	347.31	718.70	749.37	162.05	-9.769	0.000	0.269
176.00	-6.30	-13.97	0.00	-183.15	0.00	183.15	1452.89	344.00	705.04	736.82	164.09	-9.804	0.000	0.255
178.00	-6.16	-13.81	0.00	-155.21	0.00	155.21	1428.17	337.36	678.11	710.17	168.19	-9.868	0.000	0.225
180.00	-6.04	-13.51	0.00	-127.59	0.00	127.59	1400.09	330.73	651.70	682.38	172.32	-9.924	0.000	0.193
180.00	-6.04	-13.51	0.00	-127.59	0.00	127.59	678.42	203.53	25205.7	396.30	172.32	-9.924	0.000	0.335
182.00	-5.92	-13.20	0.00	-100.58	0.00	100.58	678.42	203.53	25205.7	396.30	176.47	-9.972	0.000	0.267
184.00	-5.77	-13.06	0.00	-74.18	0.00	74.18	678.42	203.53	25205.7	396.30	180.63	-10.006	0.000	0.200

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H
Site Name:	North Salem	**Exposure:**	B
Height:	195.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

4/4/2023

TES Tower Engineering Solutions

185.00	-3.09	-6.39	0.00	-61.11	0.00	61.11	678.42	203.53	25205.7	396.30	182.72	-10.019	0.000	0.160
186.00	-3.03	-6.32	0.00	-54.73	0.00	54.73	678.42	203.53	25205.7	396.30	184.81	-10.030	0.000	0.144
188.00	-2.92	-6.19	0.00	-42.08	0.00	42.08	678.42	203.53	25205.7	396.30	188.99	-10.049	0.000	0.111
190.00	-2.80	-6.05	0.00	-29.71	0.00	29.71	678.42	203.53	25205.7	396.30	193.18	-10.063	0.000	0.080
192.00	-2.69	-5.92	0.00	-17.61	0.00	17.61	678.42	203.53	25205.7	396.30	197.38	-10.072	0.000	0.049
194.00	-2.57	-5.78	0.00	-5.78	0.00	5.78	678.42	203.53	25205.7	396.30	201.58	-10.077	0.000	0.019
195.00	0.00	-5.24	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	203.68	-10.077	0.000	0.001

Wind Loading - Shaft

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

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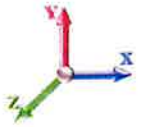
Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind
Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 31

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.205	4.63	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	4.205	4.63	0.00	1.269 *	0.756	2.00	11.127	14.12	65.3	121.4	845.2
4.00		1.00	0.70	4.205	4.63	0.00	1.272 *	0.810	2.00	11.065	14.08	65.1	129.3	847.6
6.00		1.00	0.70	4.205	4.63	0.00	1.276 *	0.843	2.00	10.995	14.03	64.9	133.7	846.7
8.00		1.00	0.70	4.205	4.63	0.00	1.279 *	0.868	2.00	10.923	13.97	64.6	136.6	844.2
10.00		1.00	0.70	4.205	4.63	0.00	1.282 *	0.887	2.00	10.849	13.91	64.3	138.7	840.9
12.00		1.00	0.70	4.205	4.63	0.00	1.286 *	0.904	2.00	10.774	13.85	64.1	140.2	837.0
14.00		1.00	0.70	4.205	4.63	0.00	1.289 *	0.918	2.00	10.698	13.79	63.8	141.3	832.7
16.00		1.00	0.70	4.205	4.63	0.00	1.293 *	0.930	2.00	10.621	13.73	63.5	142.2	828.1
18.00		1.00	0.70	4.205	4.63	0.00	1.296 *	0.941	2.00	10.544	13.67	63.2	142.8	823.3
20.00		1.00	0.70	4.205	4.63	0.00	1.300 *	0.951	2.00	10.467	13.61	62.9	143.2	818.3
22.00		1.00	0.70	4.205	4.63	0.00	1.304 *	0.960	2.00	10.389	13.54	62.6	143.4	813.2
24.00		1.00	0.70	4.205	4.63	0.00	1.307 *	0.969	2.00	10.312	13.48	62.4	143.6	807.9
26.00		1.00	0.70	4.205	4.63	0.00	1.311 *	0.976	2.00	10.234	13.42	62.1	143.6	802.5
28.00		1.00	0.70	4.205	4.63	0.00	1.315 *	0.984	2.00	10.155	13.35	61.8	143.5	797.1
30.00		1.00	0.70	4.208	4.63	0.00	1.319 *	0.991	2.00	10.077	13.29	61.5	143.4	791.5
32.00		1.00	0.71	4.287	4.72	0.00	1.323 *	0.997	2.00	9.998	13.23	62.4	143.1	785.9
34.00		1.00	0.73	4.362	4.80	0.00	1.327 *	1.003	2.00	9.920	13.16	63.2	142.8	780.2
36.00		1.00	0.74	4.433	4.88	0.00	1.331 *	1.009	2.00	9.841	13.10	63.9	142.5	774.4
38.00		1.00	0.75	4.502	4.95	0.00	1.335 *	1.014	2.00	9.762	13.04	64.6	142.0	768.6
40.00		1.00	0.76	4.569	5.03	0.00	1.340 *	1.019	2.00	9.683	12.97	65.2	141.6	762.7
41.00	Bot - Section 2	1.00	0.77	4.601	5.06	0.00	1.343 *	1.022	1.00	4.812	6.46	32.7	70.7	379.2
42.00		1.00	0.77	4.633	5.10	0.00	1.345 *	1.024	1.00	4.866	6.55	33.4	71.7	691.0
44.00		1.00	0.78	4.695	5.16	0.00	1.348 *	1.029	2.00	9.674	13.04	67.4	142.8	1373.3
46.00		1.00	0.79	4.755	5.23	0.00	1.353 *	1.034	2.00	9.594	12.98	67.9	142.2	1362.0
48.00	Top - Section 1	1.00	0.80	4.813	5.29	0.00	1.357 *	1.038	2.00	9.515	12.92	68.4	141.6	1350.5
50.00		1.00	0.81	4.870	5.36	0.00	1.354 *	1.042	2.00	9.436	12.77	68.4	140.9	745.0
52.00		1.00	0.82	4.924	5.42	0.00	1.358 *	1.047	2.00	9.357	12.71	68.8	140.3	738.9
54.00		1.00	0.83	4.978	5.48	0.00	1.363 *	1.050	2.00	9.278	12.64	69.2	139.6	732.8
56.00		1.00	0.84	5.030	5.53	0.00	1.239 *	1.054	2.00	9.198	11.40	63.1	138.8	726.7
58.00		1.00	0.85	5.081	5.59	0.00	1.200	1.058	2.00	9.119	10.94	61.2	138.1	720.5
60.00		1.00	0.85	5.130	5.64	0.00	1.200	1.062	2.00	9.039	10.85	61.2	137.3	714.3
62.00		1.00	0.86	5.178	5.70	0.00	1.200	1.065	2.00	8.960	10.75	61.2	136.5	708.1
64.00		1.00	0.87	5.225	5.75	0.00	1.200	1.068	2.00	8.880	10.66	61.3	135.7	701.9
66.00		1.00	0.88	5.272	5.80	0.00	1.200	1.072	2.00	8.801	10.56	61.2	134.8	695.7
68.00		1.00	0.89	5.317	5.85	0.00	1.200	1.075	2.00	8.721	10.47	61.2	134.0	689.4
70.00		1.00	0.89	5.361	5.90	0.00	1.200	1.078	2.00	8.642	10.37	61.2	133.1	683.1
72.00		1.00	0.90	5.404	5.94	0.00	1.200	1.081	2.00	8.562	10.27	61.1	132.2	676.8
74.00		1.00	0.91	5.447	5.99	0.00	1.200	1.084	2.00	8.483	10.18	61.0	131.3	670.5
76.00		1.00	0.91	5.488	6.04	0.00	1.200	1.087	2.00	8.403	10.08	60.9	130.4	664.2
78.00		1.00	0.92	5.529	6.08	0.00	1.200	1.090	2.00	8.323	9.99	60.7	129.4	657.8
80.00		1.00	0.93	5.569	6.13	0.00	1.200	1.093	2.00	8.244	9.89	60.6	128.5	651.5
82.00		1.00	0.93	5.609	6.17	0.00	1.200	1.095	2.00	8.164	9.80	60.4	127.5	645.1
84.00		1.00	0.94	5.648	6.21	0.00	1.200	1.098	2.00	8.084	9.70	60.3	126.5	638.7
85.00	Bot - Section 3	1.00	0.94	5.667	6.23	0.00	1.200	1.099	1.00	4.012	4.81	30.0	63.0	317.1
86.00		1.00	0.95	5.686	6.25	0.00	1.200	1.101	1.00	4.066	4.88	30.5	64.0	574.4
88.00		1.00	0.95	5.723	6.30	0.00	1.200	1.103	2.00	8.073	9.69	61.0	126.9	1139.6

Wind Loading - Shaft

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H		4/4/2023	
Site Name:	North Salem		**Exposure:**	B			
Height:	195.00 (ft)		**Crest Height:**	0.00			
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil			
Gh:	1.1	**Topography:** 1	**Struct Class:**	II		Page: 38	

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90.00	1.00	0.96	5.760	6.34	0.00	1.200	1.106	2.00	7.993	9.59	60.8	125.9	1127.8
91.00 Top - Section 2	1.00	0.96	5.778	6.36	0.00	1.200	1.107	1.00	3.966	4.76	30.3	62.7	559.6
92.00	1.00	0.96	5.796	6.38	0.00	1.200	1.108	1.00	3.946	4.74	30.2	62.4	312.0
93.00 Top - Section 3	1.00	0.97	5.814	6.40	0.00	1.200	1.109	1.00	3.926	4.71	30.1	62.2	310.4
94.00	1.00	0.97	5.832	6.42	0.00	1.200	1.110	1.00	3.906	4.69	30.1	61.9	273.8
96.00	1.00	0.98	5.867	6.45	0.00	1.200	1.113	2.00	7.753	9.30	60.0	122.8	543.2
98.00	1.00	0.98	5.902	6.49	0.00	1.200	1.115	2.00	7.673	9.21	59.8	121.7	537.5
100.00	1.00	0.99	5.936	6.53	0.00	1.200	1.117	2.00	7.594	9.11	59.5	120.7	531.8
102.00	1.00	0.99	5.970	6.57	0.00	1.200	1.119	2.00	7.514	9.02	59.2	119.6	526.1
104.00	1.00	1.00	6.003	6.60	0.00	1.200	1.122	2.00	7.434	8.92	58.9	118.5	520.3
106.00	1.00	1.00	6.036	6.64	0.00	1.200	1.124	2.00	7.354	8.82	58.6	117.4	514.6
108.00	1.00	1.01	6.068	6.67	0.00	1.200	1.126	2.00	7.274	8.73	58.3	116.3	508.9
110.00	1.00	1.02	6.100	6.71	0.00	1.200	1.128	2.00	7.194	8.63	57.9	115.2	503.1
112.00	1.00	1.02	6.131	6.74	0.00	1.200	1.130	2.00	7.114	8.54	57.6	114.1	497.4
114.00	1.00	1.03	6.163	6.78	0.00	1.200	1.132	2.00	7.034	8.44	57.2	112.9	491.6
116.00	1.00	1.03	6.193	6.81	0.00	1.205 *	1.134	2.00	6.954	8.38	57.1	111.8	485.9
118.00	1.00	1.04	6.224	6.85	0.00	1.209 *	1.136	2.00	6.874	8.31	56.9	110.7	480.1
120.00	1.00	1.04	6.253	6.88	0.00	1.214 *	1.138	2.00	6.794	8.25	56.7	109.5	474.3
122.00	1.00	1.05	6.283	6.91	0.00	1.219 *	1.140	2.00	6.714	8.18	56.6	108.3	468.5
124.00	1.00	1.05	6.312	6.94	0.00	1.224 *	1.142	2.00	6.634	8.12	56.4	107.2	462.7
125.00 Top - Section 4	1.00	1.05	6.327	6.96	0.00	1.228 *	1.142	1.00	3.287	4.03	28.1	53.3	229.3
126.00	1.00	1.06	6.341	6.98	0.00	1.230 *	1.143	1.00	3.267	4.02	28.0	53.0	199.0
128.00	1.00	1.06	6.370	7.01	0.00	1.234 *	1.145	2.00	6.474	7.99	56.0	104.8	393.9
130.00 Bot - Section 6	1.00	1.07	6.398	7.04	0.00	1.239 *	1.147	2.00	6.394	7.92	55.8	103.6	388.8
132.00	1.00	1.07	6.426	7.07	0.00	1.245 *	1.149	2.00	6.420	7.99	56.5	104.2	672.0
134.00	1.00	1.07	6.454	7.10	0.00	1.250 *	1.150	2.00	6.340	7.93	56.3	103.0	663.1
135.00 Top - Section 5	1.00	1.08	6.468	7.11	0.00	1.255 *	1.151	1.00	3.140	3.94	28.0	51.2	328.3
136.00	1.00	1.08	6.481	7.13	0.00	1.250 *	1.152	1.00	3.120	3.90	27.8	50.9	189.8
138.00	1.00	1.08	6.508	7.16	0.00	1.254 *	1.154	2.00	6.180	7.75	55.5	100.6	375.4
140.00 Top - Section 6	1.00	1.09	6.535	7.19	0.00	1.260 *	1.155	2.00	6.100	7.69	55.2	99.4	370.4
142.00	1.00	1.09	6.562	7.22	0.00	1.266 *	1.157	2.00	6.020	7.62	55.0	98.2	312.3
144.00	1.00	1.10	6.588	7.25	0.00	1.200	1.159	2.00	5.939	7.13	51.6	96.9	307.9
146.00	1.00	1.10	6.614	7.28	0.00	1.200	1.160	2.00	5.859	7.03	51.2	95.7	303.6
148.00	1.00	1.11	6.640	7.30	0.00	1.200	1.162	2.00	5.779	6.94	50.7	94.5	299.3
150.00	1.00	1.11	6.665	7.33	0.00	1.200	1.163	2.00	5.699	6.84	50.1	93.2	295.0
152.00	1.00	1.11	6.690	7.36	0.00	1.200	1.165	2.00	5.619	6.74	49.6	92.0	290.6
154.00	1.00	1.12	6.715	7.39	0.00	1.200	1.167	2.00	5.539	6.65	49.1	90.7	286.3
156.00	1.00	1.12	6.740	7.41	0.00	1.200	1.168	2.00	5.459	6.55	48.6	89.5	281.9
158.00	1.00	1.13	6.765	7.44	0.00	1.200	1.170	2.00	5.379	6.45	48.0	88.2	277.6
160.00	1.00	1.13	6.789	7.47	0.00	1.200	1.171	2.00	5.299	6.36	47.5	86.9	273.2
162.00	1.00	1.13	6.813	7.49	0.00	1.200	1.172	2.00	5.218	6.26	46.9	85.6	268.9
164.00	1.00	1.14	6.837	7.52	0.00	1.200	1.174	2.00	5.138	6.17	46.4	84.4	264.5
165.00 Appurtenance(s)	1.00	1.14	6.849	7.53	0.00	1.200	1.175	1.00	2.539	3.05	23.0	41.9	130.8
166.00	1.00	1.14	6.861	7.55	0.00	1.200	1.175	1.00	2.519	3.02	22.8	41.5	129.7
168.00	1.00	1.15	6.885	7.57	0.00	1.200	1.177	2.00	4.978	5.97	45.2	81.8	255.8
170.00	1.00	1.15	6.908	7.60	0.00	1.200	1.178	2.00	4.898	5.88	44.7	80.5	251.4
172.00	1.00	1.15	6.931	7.62	0.00	1.200	1.180	2.00	4.818	5.78	44.1	79.2	247.0
174.00	1.00	1.16	6.954	7.65	0.00	1.200	1.181	2.00	4.738	5.69	43.5	77.9	242.6
175.00 Appurtenance(s)	1.00	1.16	6.965	7.66	0.00	1.200	1.182	1.00	2.339	2.81	21.5	38.6	119.8
176.00	1.00	1.16	6.977	7.67	0.00	1.200	1.182	1.00	2.319	2.78	21.4	38.3	118.7
178.00	1.00	1.17	6.999	7.70	0.00	1.200	1.184	2.00	4.577	5.49	42.3	75.3	233.8
180.00 Top - Section 7	1.00	1.17	7.022	7.72	0.00	1.200 *	1.185	2.00	4.497	5.40	41.7	74.0	229.4
182.00	1.00	1.17	7.044	7.75	0.00	1.200 *	1.186	2.00	4.395	5.27	40.9	73.0	244.0
184.00	1.00	1.18	7.066	7.77	0.00	1.200	1.187	2.00	4.396	5.27	41.0	73.1	244.1
185.00 Appurtenance(s)	1.00	1.18	7.077	7.78	0.00	1.200	1.188	1.00	2.198	2.64	20.5	36.6	122.1
186.00	1.00	1.18	7.088	7.80	0.00	1.200	1.189	1.00	2.198	2.64	20.6	36.6	122.1
188.00	1.00	1.18	7.109	7.82	0.00	1.200	1.190	2.00	4.397	5.28	41.3	73.2	244.2

Wind Loading - Shaft

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:** II	Page: 39	

Tower Engineering Solutions

190.00	1.00	1.19	7.131	7.84	0.00	1.200	1.191	2.00	4.397	5.28	41.4	73.3	244.3
192.00	1.00	1.19	7.152	7.87	0.00	1.200	1.193	2.00	4.398	5.28	41.5	73.4	244.4
194.00	1.00	1.19	7.173	7.89	0.00	1.200	1.194	2.00	4.398	5.28	41.6	73.5	244.5
195.00 Appurtenance(s)	1.00	1.20	7.184	7.90	0.00	1.200	1.194	1.00	2.199	2.64	20.9	36.8	122.3
							Totals:	**195.00**			**5,539.2**		**57,087.8**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

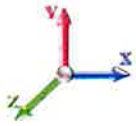
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 31

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	HRK12 (Handrail Kit)	1	7.184	7.902	1.00	1.00	11.26	788.35	0.000	0.000	89.02	0.00	0.00
2	195.00	Low Profile	1	7.184	7.902	1.00	1.00	40.29	3234.97	0.000	0.000	318.35	0.00	0.00
3	195.00	PRK-1245 (kicker kit)	1	7.184	7.902	1.00	1.00	16.31	684.92	0.000	0.000	128.87	0.00	0.00
4	195.00	(3) SFS-H-L (V-Braces)	1	7.184	7.902	1.00	1.00	11.50	394.77	0.000	0.000	90.89	0.00	0.00
5	195.00	TD-RRH8x20-25	3	7.184	7.902	0.50	1.00	6.89	464.14	0.000	0.000	54.44	0.00	0.00
6	195.00	NNVV-65B-R4	3	7.184	7.902	0.76	1.00	30.25	667.54	0.000	0.000	239.03	0.00	0.00
7	195.00	1900MHz RRH (65MHz)	3	7.184	7.902	0.50	1.00	5.46	315.61	0.000	0.000	43.13	0.00	0.00
8	195.00	800 MHz RRH	6	7.184	7.902	0.50	1.00	9.82	558.71	0.000	0.000	77.59	0.00	0.00
9	195.00	APXVTM14-C-I20	3	7.184	7.902	0.81	1.00	17.22	510.93	0.000	0.000	136.08	0.00	0.00
10	185.00	(3) SitePro 1 PRK-SFS-L	1	7.077	7.784	0.80	0.80	9.18	393.62	0.000	0.000	71.47	0.00	0.00
11	185.00	Powerwave LGP21903	6	7.077	7.784	0.40	0.80	1.30	59.63	0.000	0.000	10.10	0.00	0.00
12	185.00	Sector Frames	1	7.077	7.784	1.00	1.00	34.02	2391.10	0.000	0.000	264.86	0.00	0.00
13	185.00	Cci DMP65R-BU8DA	6	7.077	7.784	0.58	0.80	66.90	2163.78	0.000	0.000	520.82	0.00	0.00
14	185.00	Ericsson RRUS 4478 B14	3	7.077	7.784	0.40	0.80	2.64	276.53	0.000	0.000	20.54	0.00	0.00
15	185.00	(3) SitePro 1 SFS-L with	1	7.077	7.784	0.80	0.80	13.32	1546.08	0.000	0.000	103.71	0.00	0.00
16	185.00	(3) SitePro 1 HRK14-3HD	1	7.077	7.784	0.80	0.80	12.99	1223.06	0.000	0.000	101.12	0.00	0.00
17	185.00	Ericsson RRUS 8843 B2	3	7.077	7.784	0.40	0.80	2.37	318.87	0.000	0.000	18.48	0.00	0.00
18	185.00	Raycap DC6-48-60-18-8F	1	7.077	7.784	0.40	0.80	0.49	62.55	0.000	0.000	3.79	0.00	0.00
19	185.00	Powerwave LGP21401	6	7.077	7.784	0.40	0.80	4.46	161.04	0.000	0.000	34.73	0.00	0.00
20	185.00	Powerwave 7770	3	7.077	7.784	0.58	0.80	10.88	382.29	0.000	0.000	84.70	0.00	0.00
21	185.00	Raycap	1	7.077	7.784	0.40	0.80	2.15	73.64	0.000	0.000	16.76	0.00	0.00
22	185.00	Raycap DC6-48-60-18-8C	1	7.077	7.784	0.40	0.80	0.68	44.82	0.000	0.000	5.32	0.00	0.00
23	185.00	Ericsson 4449 B5/B12	3	7.077	7.784	0.40	0.80	2.81	323.82	0.000	0.000	21.88	0.00	0.00
24	175.00	Ericsson 4449 B71 + B85	3	6.965	7.662	0.80	0.80	5.62	323.22	0.000	0.000	43.04	0.00	0.00
25	175.00	RFS	3	6.965	7.662	0.50	0.80	10.71	404.56	0.000	0.000	82.06	0.00	0.00
26	175.00	RFS	3	6.965	7.662	0.56	0.80	36.14	1256.34	0.000	0.000	276.89	0.00	0.00
27	175.00	Commscope	3	6.965	7.662	0.64	0.80	26.27	448.11	0.000	0.000	201.27	0.00	0.00
28	175.00	Platform w/ Hand Rail	1	6.965	7.662	1.00	1.00	50.90	2741.64	0.000	0.000	390.02	0.00	0.00
29	175.00	Ericsson RRUS11 B2	6	6.965	7.662	0.40	0.80	7.75	688.36	0.000	0.000	59.38	0.00	0.00
30	175.00	Ericsson RRUS11 B4	3	6.965	7.662	0.40	0.80	3.88	344.18	0.000	0.000	29.69	0.00	0.00
31	165.00	BSAMNT-SBS-1-2	3	6.849	7.534	0.56	0.75	0.00	125.54	0.000	0.000	0.00	0.00	0.00
32	165.00	RMQLP-4096-HK Plat. +	1	6.849	7.534	1.00	1.00	77.45	4762.55	0.000	0.000	583.50	0.00	0.00
33	165.00	Raycap	9	6.849	7.534	0.38	0.75	15.57	808.91	0.000	0.000	117.30	0.00	0.00
34	165.00	B5/B13 RRH-BR04C	12	6.849	7.534	0.38	0.75	10.10	1526.70	0.000	0.000	76.09	0.00	0.00
35	165.00	B2/B66A RRH-BR049	12	6.849	7.534	0.38	0.75	10.10	1785.89	0.000	0.000	76.09	0.00	0.00
36	165.00	Samsung MT6407-77A	6	6.849	7.534	0.52	0.75	16.76	1021.82	0.000	0.000	126.27	0.00	0.00
37	165.00	Commscope	15	6.849	7.534	0.62	0.75	83.37	2694.87	0.000	0.000	628.13	0.00	0.00
							Totals:		**35,973.45**			**5,145.42**		

Total Applied Force Summary

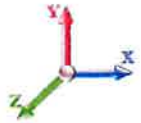
Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 31

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		65.32	944.58	0.00	0.00
4.00		65.12	947.88	0.00	0.00
6.00		64.88	947.43	0.00	0.00
8.00		64.62	945.35	0.00	0.00
10.00		64.35	942.35	0.00	0.00
12.00		64.07	938.73	0.00	0.00
14.00		63.79	934.69	0.00	0.00
16.00		63.51	930.32	0.00	0.00
18.00		63.22	925.71	0.00	0.00
20.00		62.93	920.89	0.00	0.00
22.00		62.64	915.90	0.00	0.00
24.00		62.35	910.77	0.00	0.00
26.00		62.06	905.52	0.00	0.00
28.00		61.77	900.16	0.00	0.00
30.00		61.52	894.72	0.00	0.00
32.00		62.37	889.20	0.00	0.00
34.00		63.15	883.60	0.00	0.00
36.00		63.88	877.94	0.00	0.00
38.00		64.56	872.22	0.00	0.00
40.00		65.19	866.45	0.00	0.00
41.00		32.70	431.10	0.00	0.00
42.00		33.36	742.90	0.00	0.00
44.00		67.36	1477.24	0.00	0.00
46.00		67.89	1465.95	0.00	0.00
48.00		68.39	1454.61	0.00	0.00
50.00		68.42	849.13	0.00	0.00
52.00		68.84	843.12	0.00	0.00
54.00		69.24	837.09	0.00	0.00
56.00		63.08	825.05	0.00	0.00
58.00		61.15	812.94	0.00	0.00
60.00		61.21	806.78	0.00	0.00
62.00		61.24	800.59	0.00	0.00
64.00		61.25	794.39	0.00	0.00
66.00		61.24	788.16	0.00	0.00
68.00		61.21	781.92	0.00	0.00
70.00		61.15	775.66	0.00	0.00
72.00		61.08	769.38	0.00	0.00
74.00		60.99	763.08	0.00	0.00
76.00		60.88	756.76	0.00	0.00
78.00		60.75	750.44	0.00	0.00
80.00		60.60	744.09	0.00	0.00
82.00		60.44	737.73	0.00	0.00
84.00		60.27	731.36	0.00	0.00
85.00		30.01	363.41	0.00	0.00
86.00		30.52	620.69	0.00	0.00
88.00		60.99	1232.29	0.00	0.00

90.00		60.77	1220.49	0.00	0.00
91.00		30.25	605.94	0.00	0.00
92.00		30.19	358.37	0.00	0.00
93.00		30.13	356.76	0.00	0.00
94.00		30.07	320.19	0.00	0.00
96.00		60.05	635.87	0.00	0.00
98.00		59.78	630.19	0.00	0.00
100.00		59.50	624.50	0.00	0.00
102.00		59.21	618.81	0.00	0.00
104.00		58.90	613.10	0.00	0.00
106.00		58.59	607.39	0.00	0.00
108.00		58.26	601.66	0.00	0.00
110.00		57.93	595.93	0.00	0.00
112.00		57.58	590.19	0.00	0.00
114.00		57.22	584.44	0.00	0.00
116.00		57.09	578.68	0.00	0.00
118.00		56.92	572.91	0.00	0.00
120.00		56.74	567.14	0.00	0.00
122.00		56.56	561.36	0.00	0.00
124.00		56.37	555.57	0.00	0.00
125.00		28.08	275.76	0.00	0.00
126.00		28.03	245.42	0.00	0.00
128.00		55.98	486.77	0.00	0.00
130.00		55.77	481.73	0.00	0.00
132.00		56.48	764.88	0.00	0.00
134.00		56.27	755.97	0.00	0.00
135.00		28.02	374.79	0.00	0.00
136.00		27.80	236.23	0.00	0.00
138.00		55.48	468.37	0.00	0.00
140.00		55.25	463.31	0.00	0.00
142.00		55.00	405.22	0.00	0.00
144.00		51.65	399.27	0.00	0.00
146.00		51.15	393.31	0.00	0.00
148.00		50.65	388.99	0.00	0.00
150.00		50.14	384.66	0.00	0.00
152.00		49.62	380.32	0.00	0.00
154.00		49.10	375.98	0.00	0.00
156.00		48.57	371.63	0.00	0.00
158.00		48.03	367.28	0.00	0.00
160.00		47.48	362.92	0.00	0.00
162.00		46.93	358.56	0.00	0.00
164.00		46.37	354.20	0.00	0.00
165.00	(58) attachments	1630.35	12901.90	0.00	0.00
166.00		22.81	159.55	0.00	0.00
168.00		45.24	315.50	0.00	0.00
170.00		44.66	311.12	0.00	0.00
172.00		44.08	306.74	0.00	0.00
174.00		43.49	302.35	0.00	0.00
175.00	(22) attachments	1103.86	6356.10	0.00	0.00
176.00		21.35	144.81	0.00	0.00
178.00		42.29	286.43	0.00	0.00
180.00		64.80	285.03	0.00	0.00
182.00		64.07	299.61	0.00	0.00
184.00		41.00	296.68	0.00	0.00
185.00	(37) attachments	1298.81	9568.98	0.00	0.00
186.00		20.57	126.66	0.00	0.00
188.00		41.26	253.41	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

190.00		41.39	253.49	0.00	0.00
192.00		41.52	253.57	0.00	0.00
194.00		41.64	253.65	0.00	0.00
195.00	(22) attachments	1198.25	7746.77	0.00	0.00
	Totals:	**10,730.98**	**101,567.69**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

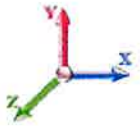
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 31

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.92	0.00	0.119	1.058	4.205	0.00	1.39
2.00	(4) C5x9	Yes	2.00	0.000	3.78	0.88	0.00	0.119	1.058	4.205	0.00	8.31
4.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.94	0.00	0.120	1.060	4.205	0.00	1.60
4.00	(4) C5x9	Yes	2.00	0.000	3.78	0.90	0.00	0.120	1.060	4.205	0.00	8.94
6.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.95	0.00	0.121	1.063	4.205	0.00	1.74
6.00	(4) C5x9	Yes	2.00	0.000	3.78	0.91	0.00	0.121	1.063	4.205	0.00	9.34
8.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.96	0.00	0.122	1.066	4.205	0.00	1.84
8.00	(4) C5x9	Yes	2.00	0.000	3.78	0.92	0.00	0.122	1.066	4.205	0.00	9.63
10.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.96	0.00	0.123	1.069	4.205	0.00	1.92
10.00	(4) C5x9	Yes	2.00	0.000	3.78	0.93	0.00	0.123	1.069	4.205	0.00	9.87
12.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.97	0.00	0.124	1.071	4.205	0.00	2.00
12.00	(4) C5x9	Yes	2.00	0.000	3.78	0.93	0.00	0.124	1.071	4.205	0.00	10.07
14.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.97	0.00	0.125	1.074	4.205	0.00	2.06
14.00	(4) C5x9	Yes	2.00	0.000	3.78	0.94	0.00	0.125	1.074	4.205	0.00	10.24
16.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.98	0.00	0.126	1.077	4.205	0.00	2.11
16.00	(4) C5x9	Yes	2.00	0.000	3.78	0.94	0.00	0.126	1.077	4.205	0.00	10.39
18.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.98	0.00	0.127	1.080	4.205	0.00	2.16
18.00	(4) C5x9	Yes	2.00	0.000	3.78	0.94	0.00	0.127	1.080	4.205	0.00	10.53
20.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.98	0.00	0.128	1.083	4.205	0.00	2.21
20.00	(4) C5x9	Yes	2.00	0.000	3.78	0.95	0.00	0.128	1.083	4.205	0.00	10.65
22.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.99	0.00	0.129	1.086	4.205	0.00	2.25
22.00	(4) C5x9	Yes	2.00	0.000	3.78	0.95	0.00	0.129	1.086	4.205	0.00	10.77
24.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.99	0.00	0.130	1.089	4.205	0.00	2.29
24.00	(4) C5x9	Yes	2.00	0.000	3.78	0.95	0.00	0.130	1.089	4.205	0.00	10.87
26.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.99	0.00	0.131	1.093	4.205	0.00	2.33
26.00	(4) C5x9	Yes	2.00	0.000	3.78	0.96	0.00	0.131	1.093	4.205	0.00	10.97
28.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.99	0.00	0.132	1.096	4.205	0.00	2.36
28.00	(4) C5x9	Yes	2.00	0.000	3.78	0.96	0.00	0.132	1.096	4.205	0.00	11.06
30.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.00	0.00	0.133	1.099	4.208	0.00	2.40
30.00	(4) C5x9	Yes	2.00	0.000	3.78	0.96	0.00	0.133	1.099	4.208	0.00	11.14
32.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.00	0.00	0.134	1.102	4.287	0.00	2.43
32.00	(4) C5x9	Yes	2.00	0.000	3.78	0.96	0.00	0.134	1.102	4.287	0.00	11.23
34.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.00	0.00	0.135	1.106	4.362	0.00	2.46
34.00	(4) C5x9	Yes	2.00	0.000	3.78	0.96	0.00	0.135	1.106	4.362	0.00	11.30
36.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.00	0.00	0.136	1.109	4.433	0.00	2.49
36.00	(4) C5x9	Yes	2.00	0.000	3.78	0.97	0.00	0.136	1.109	4.433	0.00	11.38
38.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.00	0.00	0.138	1.113	4.502	0.00	2.51
38.00	(4) C5x9	Yes	2.00	0.000	3.78	0.97	0.00	0.138	1.113	4.502	0.00	11.44
40.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.01	0.00	0.139	1.116	4.569	0.00	2.54
40.00	(4) C5x9	Yes	2.00	0.000	3.78	0.97	0.00	0.139	1.116	4.569	0.00	11.51
41.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.50	0.00	0.140	1.119	4.601	0.00	1.28
41.00	(4) C5x9	Yes	1.00	0.000	3.78	0.49	0.00	0.140	1.119	4.601	0.00	5.77
42.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.50	0.00	0.140	1.121	4.633	0.00	1.28
42.00	(4) C5x9	Yes	1.00	0.000	3.78	0.49	0.00	0.140	1.121	4.633	0.00	5.79
44.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.01	0.00	0.141	1.124	4.695	0.00	2.59
44.00	(4) C5x9	Yes	2.00	0.000	3.78	0.97	0.00	0.141	1.124	4.695	0.00	11.64
46.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.01	0.00	0.142	1.127	4.755	0.00	2.61

Linear Appurtenance Segment Forces (Factored)

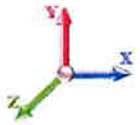
Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

TES Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind
Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 31

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
46.00	(4) C5x9	Yes	2.00	0.000	3.78	0.97	0.00	0.142	1.127	4.755	0.00	11.69
48.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.01	0.00	0.144	1.131	4.813	0.00	2.63
48.00	(4) C5x9	Yes	2.00	0.000	3.78	0.98	0.00	0.144	1.131	4.813	0.00	11.75
50.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.01	0.00	0.143	1.128	4.870	0.00	2.66
50.00	(4) C5x9	Yes	2.00	0.000	3.78	0.98	0.00	0.143	1.128	4.870	0.00	11.81
52.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.144	1.132	4.924	0.00	2.68
52.00	(4) C5x9	Yes	2.00	0.000	3.78	0.98	0.00	0.144	1.132	4.924	0.00	11.86
54.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.145	1.136	4.978	0.00	2.70
54.00	(4) C5x9	Yes	2.00	0.000	3.78	0.98	0.00	0.145	1.136	4.978	0.00	11.91
56.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.111	1.033	5.030	0.00	2.72
56.00	(4) C5x9	Yes	1.00	0.000	3.78	0.49	0.00	0.111	1.033	5.030	0.00	5.98
58.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.076	0.000	5.081	0.00	2.74
60.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.077	0.000	5.130	0.00	2.75
62.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.077	0.000	5.178	0.00	2.77
64.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.078	0.000	5.225	0.00	2.79
66.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.079	0.000	5.272	0.00	2.81
68.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.02	0.00	0.080	0.000	5.317	0.00	2.82
70.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.080	0.000	5.361	0.00	2.84
72.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.081	0.000	5.404	0.00	2.86
74.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.082	0.000	5.447	0.00	2.87
76.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.083	0.000	5.488	0.00	2.89
78.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.084	0.000	5.529	0.00	2.90
80.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.085	0.000	5.569	0.00	2.92
82.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.085	0.000	5.609	0.00	2.93
84.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.086	0.000	5.648	0.00	2.95
85.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.087	0.000	5.667	0.00	1.48
86.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.088	0.000	5.686	0.00	1.48
88.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.03	0.00	0.088	0.000	5.723	0.00	2.97
90.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.089	0.000	5.760	0.00	2.99
91.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.090	0.000	5.778	0.00	1.50
92.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.089	0.000	5.796	0.00	1.50
93.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.089	0.000	5.814	0.00	1.50
94.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.090	0.000	5.832	0.00	1.51
96.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.090	0.000	5.867	0.00	3.03
98.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.091	0.000	5.902	0.00	3.04
100.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.092	0.000	5.936	0.00	3.05
102.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.093	0.000	5.970	0.00	3.06
104.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.094	0.000	6.003	0.00	3.07
106.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.096	0.000	6.036	0.00	3.09
108.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.097	0.000	6.068	0.00	3.10
110.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.098	0.000	6.100	0.00	3.11
112.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.099	0.000	6.131	0.00	3.12
114.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.100	0.000	6.163	0.00	3.13
116.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.04	0.00	0.101	1.004	6.193	0.00	3.14
118.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.103	1.008	6.224	0.00	3.15
120.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.104	1.012	6.253	0.00	3.16
122.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.105	1.016	6.283	0.00	3.17

Linear Appurtenance Segment Forces (Factored)

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 31

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
124.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.107	1.020	6.312	0.00	3.18
125.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.108	1.023	6.327	0.00	1.59
126.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.52	0.00	0.108	1.025	6.341	0.00	1.60
128.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.109	1.028	6.370	0.00	3.20
130.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.111	1.033	6.398	0.00	3.21
132.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.112	1.037	6.426	0.00	3.22
134.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.114	1.042	6.454	0.00	3.23
135.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.53	0.00	0.115	1.045	6.468	0.00	1.62
136.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.53	0.00	0.114	1.042	6.481	0.00	1.62
138.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.115	1.045	6.508	0.00	3.25
140.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.117	1.050	6.535	0.00	3.26
142.00	(4) C6x10.5	Yes	2.00	0.000	4.00	1.05	0.00	0.118	1.055	6.562	0.00	3.27
144.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.53	0.00	0.060	0.000	6.588	0.00	1.64
178.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.31	0.00	0.063	0.000	6.999	0.00	0.43
180.00	(3) Bypass Stiffeners	Yes	2.00	1.200	12.60	2.49	2.99	0.512	0.000	7.022	23.12	3.43
182.00	(3) Bypass Stiffeners	Yes	2.00	1.200	12.60	2.50	2.99	0.525	0.000	7.044	23.20	3.44
184.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.31	0.00	0.066	0.000	7.066	0.00	0.43
										Totals:	**46.3**	**501.9**

Calculated Forces

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind
Dead Load Factor 1.20
Wind Load Factor 1.00

Iterations 31

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-101.5	-10.75	0.00	-1624.0	0.00	1624.02	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.230
2.00	-100.6	-10.72	0.00	-1602.5	0.00	1602.52	5777.89	1549.56	8174.96	7566.71	0.00	-0.020	0.000	0.229
4.00	-99.67	-10.69	0.00	-1581.0	0.00	1581.08	5752.42	1537.95	8052.92	7476.52	0.02	-0.040	0.000	0.229
6.00	-98.71	-10.66	0.00	-1559.7	0.00	1559.71	5726.67	1526.34	7931.81	7386.49	0.04	-0.060	0.000	0.228
8.00	-97.77	-10.63	0.00	-1538.4	0.00	1538.40	5700.65	1514.73	7811.61	7296.62	0.07	-0.081	0.000	0.228
10.00	-96.82	-10.60	0.00	-1517.1	0.00	1517.14	5674.37	1503.12	7692.32	7206.92	0.11	-0.101	0.000	0.228
12.00	-95.88	-10.56	0.00	-1495.9	0.00	1495.95	5647.82	1491.51	7573.96	7117.40	0.15	-0.122	0.000	0.227
14.00	-94.94	-10.53	0.00	-1474.8	0.00	1474.82	5620.99	1479.91	7456.51	7028.07	0.21	-0.143	0.000	0.227
16.00	-94.00	-10.50	0.00	-1453.7	0.00	1453.76	5593.90	1468.30	7339.98	6938.94	0.27	-0.164	0.000	0.226
18.00	-93.08	-10.47	0.00	-1432.7	0.00	1432.75	5566.54	1456.69	7224.37	6850.01	0.35	-0.186	0.000	0.226
20.00	-92.15	-10.44	0.00	-1411.8	0.00	1411.81	5538.91	1445.08	7109.68	6761.30	0.43	-0.207	0.000	0.225
22.00	-91.23	-10.41	0.00	-1390.9	0.00	1390.93	5511.02	1433.47	6995.90	6672.80	0.52	-0.229	0.000	0.225
24.00	-90.32	-10.38	0.00	-1370.1	0.00	1370.11	5482.85	1421.86	6883.05	6584.53	0.62	-0.251	0.000	0.225
26.00	-89.41	-10.35	0.00	-1349.3	0.00	1349.36	5454.41	1410.25	6771.11	6496.50	0.73	-0.273	0.000	0.224
28.00	-88.50	-10.31	0.00	-1328.6	0.00	1328.67	5425.71	1398.64	6660.08	6408.72	0.85	-0.296	0.000	0.224
30.00	-87.60	-10.28	0.00	-1308.0	0.00	1308.04	5396.74	1387.03	6549.98	6321.18	0.98	-0.318	0.000	0.223
32.00	-86.71	-10.25	0.00	-1287.4	0.00	1287.47	5367.49	1375.42	6440.79	6233.91	1.12	-0.341	0.000	0.223
34.00	-85.82	-10.22	0.00	-1266.9	0.00	1266.97	5337.98	1363.81	6332.52	6146.90	1.27	-0.364	0.000	0.222
36.00	-84.94	-10.18	0.00	-1246.5	0.00	1246.54	5308.20	1352.20	6225.17	6060.17	1.42	-0.388	0.000	0.222
38.00	-84.07	-10.15	0.00	-1226.1	0.00	1226.18	5278.15	1340.59	6118.74	5973.73	1.59	-0.411	0.000	0.221
40.00	-83.20	-10.10	0.00	-1205.8	0.00	1205.89	5247.84	1328.98	6013.22	5887.58	1.77	-0.435	0.000	0.221
41.00	-82.76	-10.08	0.00	-1195.7	0.00	1195.79	5232.58	1323.18	5960.81	5844.61	1.86	-0.447	0.000	0.220
42.00	-82.02	-10.07	0.00	-1185.7	0.00	1185.71	5217.25	1317.37	5908.62	5801.72	1.96	-0.459	0.000	0.220
44.00	-80.54	-10.02	0.00	-1165.5	0.00	1165.57	5186.39	1305.76	5804.94	5716.18	2.15	-0.483	0.000	0.219
46.00	-79.07	-9.98	0.00	-1145.5	0.00	1145.53	5155.27	1294.16	5702.18	5630.95	2.36	-0.507	0.000	0.219
48.00	-77.61	-9.93	0.00	-1125.5	0.00	1125.58	5181.33	1303.87	5788.10	5702.24	2.58	-0.532	0.000	0.212
50.00	-76.76	-9.88	0.00	-1105.7	0.00	1105.72	5150.16	1292.26	5685.49	5617.06	2.81	-0.557	0.000	0.212
52.00	-75.91	-9.84	0.00	-1085.9	0.00	1085.95	5118.73	1280.65	5583.79	5532.21	3.05	-0.581	0.000	0.211
54.00	-75.07	-9.79	0.00	-1066.2	0.00	1066.28	5087.02	1269.04	5483.02	5447.69	3.29	-0.605	0.000	0.211
56.00	-74.24	-9.75	0.00	-1046.7	0.00	1046.70	5055.04	1257.43	5383.16	5363.51	3.55	-0.629	0.000	0.210
58.00	-73.43	-9.71	0.00	-1027.1	0.00	1027.19	5022.80	1245.82	5284.21	5279.69	3.82	-0.653	0.000	0.209
60.00	-72.62	-9.67	0.00	-1007.7	0.00	1007.77	4990.29	1234.21	5186.19	5196.21	4.10	-0.678	0.000	0.209
62.00	-71.81	-9.63	0.00	-988.42	0.00	988.42	4957.51	1222.60	5089.08	5113.11	4.39	-0.703	0.000	0.208
64.00	-71.01	-9.59	0.00	-969.15	0.00	969.15	4924.46	1210.99	4992.89	5030.38	4.69	-0.728	0.000	0.207
66.00	-70.22	-9.55	0.00	-949.97	0.00	949.97	4891.14	1199.39	4897.62	4948.02	5.00	-0.753	0.000	0.206
68.00	-69.44	-9.51	0.00	-930.86	0.00	930.86	4857.55	1187.78	4803.27	4866.06	5.32	-0.779	0.000	0.206
70.00	-68.66	-9.47	0.00	-911.83	0.00	911.83	4823.69	1176.17	4709.83	4784.49	5.65	-0.805	0.000	0.205
72.00	-67.89	-9.43	0.00	-892.89	0.00	892.89	4789.56	1164.56	4617.32	4703.33	6.00	-0.831	0.000	0.204
74.00	-67.12	-9.39	0.00	-874.02	0.00	874.02	4755.17	1152.95	4525.72	4622.58	6.35	-0.857	0.000	0.203
76.00	-66.36	-9.35	0.00	-855.24	0.00	855.24	4720.51	1141.34	4435.03	4542.26	6.72	-0.884	0.000	0.202
78.00	-65.61	-9.31	0.00	-836.55	0.00	836.55	4685.57	1129.73	4345.27	4462.36	7.09	-0.910	0.000	0.202
80.00	-64.86	-9.27	0.00	-817.93	0.00	817.93	4650.37	1118.12	4256.42	4382.90	7.48	-0.937	0.000	0.201
82.00	-64.12	-9.22	0.00	-799.40	0.00	799.40	4614.90	1106.51	4168.49	4303.88	7.88	-0.964	0.000	0.200
84.00	-63.38	-9.17	0.00	-780.96	0.00	780.96	4579.16	1094.90	4081.48	4225.32	8.29	-0.992	0.000	0.199
85.00	-63.02	-9.15	0.00	-771.78	0.00	771.78	4561.19	1089.10	4038.32	4186.21	8.50	-1.006	0.000	0.198
86.00	-62.40	-9.13	0.00	-762.63	0.00	762.63	4543.15	1083.29	3995.39	4147.21	8.71	-1.020	0.000	0.198
88.00	-61.16	-9.08	0.00	-744.37	0.00	744.37	4506.88	1071.68	3910.21	4069.58	9.14	-1.047	0.000	0.197
90.00	-59.94	-9.02	0.00	-726.21	0.00	726.21	4470.33	1060.07	3825.95	3992.42	9.59	-1.075	0.000	0.195

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

TES Tower Engineering Solutions

91.00	-59.33	-8.99	0.00	-717.19	0.00	717.19	4519.12	1075.59	3938.79	4095.67	9.81	-1.090	0.000	0.188
92.00	-58.97	-8.97	0.00	-708.20	0.00	708.20	4500.93	1069.79	3896.39	4056.95	10.04	-1.104	0.000	0.188
93.00	-58.61	-8.95	0.00	-699.23	0.00	699.23	4482.67	1063.98	3854.22	4018.35	10.28	-1.117	0.000	0.187
93.00	-58.61	-8.95	0.00	-699.23	0.00	699.23	3684.61	913.29	3313.08	3312.42	10.28	-1.117	0.000	0.227
94.00	-58.29	-8.93	0.00	-690.28	0.00	690.28	3670.68	908.31	3277.08	3281.76	10.51	-1.131	0.000	0.226
96.00	-57.65	-8.89	0.00	-672.42	0.00	672.42	3642.60	898.36	3205.67	3220.68	10.99	-1.162	0.000	0.225
98.00	-57.02	-8.85	0.00	-654.64	0.00	654.64	3614.26	888.41	3135.05	3159.91	11.49	-1.194	0.000	0.223
100.00	-56.39	-8.81	0.00	-636.94	0.00	636.94	3585.64	878.46	3065.22	3099.48	11.99	-1.226	0.000	0.221
102.00	-55.77	-8.77	0.00	-619.32	0.00	619.32	3556.76	868.51	2996.17	3039.38	12.51	-1.258	0.000	0.220
104.00	-55.15	-8.73	0.00	-601.79	0.00	601.79	3527.61	858.56	2927.90	2979.62	13.05	-1.290	0.000	0.218
106.00	-54.54	-8.68	0.00	-584.34	0.00	584.34	3498.19	848.61	2860.43	2920.21	13.59	-1.322	0.000	0.216
108.00	-53.93	-8.64	0.00	-566.97	0.00	566.97	3468.50	838.66	2793.74	2861.17	14.15	-1.355	0.000	0.214
110.00	-53.33	-8.60	0.00	-549.69	0.00	549.69	3438.54	828.71	2727.83	2802.49	14.73	-1.387	0.000	0.212
112.00	-52.74	-8.56	0.00	-532.49	0.00	532.49	3408.31	818.76	2662.72	2744.18	15.32	-1.420	0.000	0.210
114.00	-52.15	-8.52	0.00	-515.37	0.00	515.37	3377.82	808.81	2598.39	2686.26	15.92	-1.453	0.000	0.207
116.00	-51.57	-8.48	0.00	-498.33	0.00	498.33	3347.05	798.86	2534.84	2628.73	16.54	-1.486	0.000	0.205
118.00	-50.99	-8.43	0.00	-481.38	0.00	481.38	3316.02	788.90	2472.09	2571.60	17.16	-1.519	0.000	0.203
120.00	-50.42	-8.39	0.00	-464.52	0.00	464.52	3284.72	778.95	2410.12	2514.88	17.81	-1.552	0.000	0.200
122.00	-49.86	-8.35	0.00	-447.74	0.00	447.74	3253.15	769.00	2348.93	2458.58	18.47	-1.586	0.000	0.198
124.00	-49.30	-8.30	0.00	-431.05	0.00	431.05	3213.32	759.05	2288.53	2396.73	19.14	-1.619	0.000	0.195
125.00	-49.02	-8.28	0.00	-422.75	0.00	422.75	3192.26	754.08	2258.63	2365.26	19.48	-1.636	0.000	0.194
125.00	-49.02	-8.28	0.00	-422.75	0.00	422.75	2545.46	629.48	1888.72	1892.56	19.48	-1.636	0.000	0.243
126.00	-48.78	-8.26	0.00	-414.48	0.00	414.48	2533.76	625.34	1863.92	1871.35	19.82	-1.653	0.000	0.241
128.00	-48.29	-8.23	0.00	-397.95	0.00	397.95	2510.17	617.05	1814.81	1829.12	20.52	-1.692	0.000	0.237
130.00	-47.80	-8.19	0.00	-381.49	0.00	381.49	2486.30	608.75	1766.36	1787.17	21.24	-1.732	0.000	0.233
132.00	-47.03	-8.14	0.00	-365.11	0.00	365.11	2462.17	600.46	1718.57	1745.51	21.98	-1.772	0.000	0.228
134.00	-46.27	-8.09	0.00	-348.82	0.00	348.82	2437.77	592.17	1671.43	1704.13	22.73	-1.811	0.000	0.224
135.00	-45.90	-8.06	0.00	-340.74	0.00	340.74	2457.60	598.90	1709.65	1737.70	23.11	-1.831	0.000	0.215
136.00	-45.66	-8.05	0.00	-332.67	0.00	332.67	2445.41	594.76	1686.06	1717.00	23.49	-1.851	0.000	0.213
138.00	-45.19	-8.01	0.00	-316.57	0.00	316.57	2420.82	586.46	1639.37	1675.83	24.28	-1.888	0.000	0.208
140.00	-44.72	-7.97	0.00	-300.56	0.00	300.56	2395.97	578.17	1593.34	1634.95	25.07	-1.924	0.000	0.203
140.00	-44.72	-7.97	0.00	-300.56	0.00	300.56	1788.19	463.41	1279.47	1224.81	25.07	-1.924	0.000	0.271
142.00	-44.31	-7.93	0.00	-284.62	0.00	284.62	1771.85	456.77	1243.10	1196.12	25.89	-1.961	0.000	0.263
144.00	-43.91	-7.90	0.00	-268.76	0.00	268.76	1755.23	450.14	1207.26	1167.57	26.72	-2.005	0.000	0.256
146.00	-43.51	-7.87	0.00	-252.97	0.00	252.97	1738.36	443.51	1171.94	1139.16	27.57	-2.049	0.000	0.247
148.00	-43.12	-7.83	0.00	-237.24	0.00	237.24	1721.21	436.87	1137.14	1110.92	28.44	-2.092	0.000	0.239
150.00	-42.73	-7.80	0.00	-221.57	0.00	221.57	1703.79	430.24	1102.87	1082.85	29.32	-2.134	0.000	0.230
152.00	-42.35	-7.77	0.00	-205.97	0.00	205.97	1686.10	423.60	1069.12	1054.96	30.23	-2.175	0.000	0.221
154.00	-41.97	-7.73	0.00	-190.44	0.00	190.44	1668.15	416.97	1035.89	1027.24	31.15	-2.215	0.000	0.211
156.00	-41.59	-7.70	0.00	-174.98	0.00	174.98	1649.92	410.34	1003.19	999.72	32.08	-2.254	0.000	0.201
158.00	-41.22	-7.66	0.00	-159.58	0.00	159.58	1631.43	403.70	971.02	972.40	33.03	-2.291	0.000	0.190
160.00	-40.86	-7.62	0.00	-144.27	0.00	144.27	1612.67	397.07	939.37	945.29	34.00	-2.327	0.000	0.178
162.00	-40.50	-7.58	0.00	-129.02	0.00	129.02	1593.64	390.43	908.24	918.39	34.98	-2.360	0.000	0.166
164.00	-40.14	-7.54	0.00	-113.85	0.00	113.85	1574.34	383.80	877.64	891.72	35.98	-2.391	0.000	0.154
165.00	-27.32	-5.38	0.00	-106.32	0.00	106.32	1564.59	380.48	862.54	878.47	36.48	-2.406	0.000	0.139
166.00	-27.16	-5.36	0.00	-100.94	0.00	100.94	1554.77	377.17	847.56	865.27	36.99	-2.421	0.000	0.134
168.00	-26.84	-5.31	0.00	-90.23	0.00	90.23	1534.93	370.53	818.01	839.07	38.01	-2.448	0.000	0.125
170.00	-26.53	-5.26	0.00	-79.61	0.00	79.61	1514.83	363.90	788.98	813.12	39.04	-2.473	0.000	0.116
172.00	-26.22	-5.22	0.00	-69.08	0.00	69.08	1494.45	357.26	760.48	787.42	40.08	-2.497	0.000	0.105
174.00	-25.92	-5.17	0.00	-58.64	0.00	58.64	1473.81	350.63	732.50	761.98	41.13	-2.519	0.000	0.095
175.00	-19.62	-3.79	0.00	-53.48	0.00	53.48	1463.38	347.31	718.70	749.37	41.66	-2.529	0.000	0.085
176.00	-19.48	-3.76	0.00	-49.69	0.00	49.69	1452.89	344.00	705.04	736.82	42.19	-2.538	0.000	0.081
178.00	-19.19	-3.72	0.00	-42.16	0.00	42.16	1428.17	337.36	678.11	710.17	43.26	-2.555	0.000	0.073
180.00	-18.91	-3.64	0.00	-34.73	0.00	34.73	1400.09	330.73	651.70	682.38	44.33	-2.571	0.000	0.065
180.00	-18.91	-3.64	0.00	-34.73	0.00	34.73	678.42	203.53	25205.7	396.30	44.33	-2.571	0.000	0.116
182.00	-18.61	-3.57	0.00	-27.44	0.00	27.44	678.42	203.53	25205.7	396.30	45.41	-2.584	0.000	0.097
184.00	-18.32	-3.52	0.00	-20.31	0.00	20.31	678.42	203.53	25205.7	396.30	46.49	-2.593	0.000	0.079

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 49

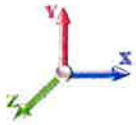
185.00	-8.82	-1.79	0.00	-16.79	0.00	16.79	678.42	203.53	25205.7	396.30	47.04	-2.597	0.000	0.055
186.00	-8.69	-1.76	0.00	-15.01	0.00	15.01	678.42	203.53	25205.7	396.30	47.58	-2.600	0.000	0.051
188.00	-8.44	-1.71	0.00	-11.48	0.00	11.48	678.42	203.53	25205.7	396.30	48.67	-2.605	0.000	0.041
190.00	-8.19	-1.66	0.00	-8.07	0.00	8.07	678.42	203.53	25205.7	396.30	49.76	-2.609	0.000	0.032
192.00	-7.94	-1.60	0.00	-4.76	0.00	4.76	678.42	203.53	25205.7	396.30	50.85	-2.611	0.000	0.024
194.00	-7.68	-1.55	0.00	-1.55	0.00	1.55	678.42	203.53	25205.7	396.30	51.95	-2.612	0.000	0.015
195.00	0.00	-1.20	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	52.50	-2.612	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Ev + 1.0Eh



Gust Response Factor	1.10			**Sds**	0.22			**Iterations**	27
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25	**SA**	0.02	**Seismic Importance Factor**	1.00	**S1**	0.06

R: 1.50

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)
0.00		0.00	0.00	0.00	0.00
2.00		692.83	1.00	30.45	0.00
4.00		688.33	3.00	30.25	0.00
6.00		683.83	5.00	30.05	0.00
8.00		679.32	7.00	29.85	0.01
10.00		674.82	9.00	29.66	0.01
12.00		670.32	11.00	29.46	0.02
14.00		665.82	13.00	29.26	0.02
16.00		661.32	15.00	29.06	0.03
18.00		656.81	17.00	28.86	0.04
20.00		652.31	19.00	28.67	0.05
22.00		647.81	21.00	28.47	0.06
24.00		643.31	23.00	28.27	0.07
26.00		638.81	25.00	28.07	0.08
28.00		634.30	27.00	27.88	0.09
30.00		629.80	29.00	27.68	0.10
32.00		625.30	31.00	27.48	0.11
34.00		620.80	33.00	27.28	0.13
36.00		616.30	35.00	27.08	0.14
38.00		611.80	37.00	26.89	0.15
40.00		607.29	39.00	26.69	0.17
41.00	Bot - Section 2	301.96	40.50	13.27	0.04
42.00		560.96	41.50	24.65	0.16
44.00		1115.1	43.00	49.01	0.69
46.00		1106.1	45.00	48.61	0.74
48.00	Top - Section 1	1097.1	47.00	48.22	0.79
50.00		593.05	49.00	26.06	0.25
52.00		588.55	51.00	25.86	0.27
54.00		584.05	53.00	25.67	0.29
56.00		579.55	55.00	25.47	0.30
58.00		575.05	57.00	25.27	0.32
60.00		570.54	59.00	25.07	0.34
62.00		566.04	61.00	24.88	0.36
64.00		561.54	63.00	24.68	0.37
66.00		557.04	65.00	24.48	0.39
68.00		552.54	67.00	24.28	0.41
70.00		548.03	69.00	24.08	0.43
72.00		543.53	71.00	23.89	0.44
74.00		539.03	73.00	23.69	0.46
76.00		534.53	75.00	23.49	0.48
78.00		530.03	77.00	23.29	0.50
80.00		525.52	79.00	23.10	0.51
82.00		521.02	81.00	22.90	0.53
84.00		516.52	83.00	22.70	0.55
85.00	Bot - Section 3	256.57	84.50	11.28	0.14
86.00		470.18	85.50	20.66	0.48

Seismic Segment Forces (Factored)

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

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88.00		933.61	87.00	41.03	1.97
90.00		924.61	89.00	40.63	2.02
91.00	Top - Section 2	458.93	90.50	20.17	0.51
92.00		252.83	91.50	11.11	0.16
93.00	Top - Section 3	251.70	92.50	11.06	0.16
94.00		221.44	93.50	9.73	0.13
96.00		439.99	95.00	19.34	0.52
98.00		436.13	97.00	19.17	0.53
100.00		432.27	99.00	19.00	0.55
102.00		428.41	101.00	18.83	0.56
104.00		424.55	103.00	18.66	0.57
106.00		420.69	105.00	18.49	0.58
108.00		416.83	107.00	18.32	0.59
110.00		412.97	109.00	18.15	0.60
112.00		409.12	111.00	17.98	0.62
114.00		405.26	113.00	17.81	0.63
116.00		401.40	115.00	17.64	0.64
118.00		397.54	117.00	17.47	0.65
120.00		393.68	119.00	17.30	0.65
122.00		389.82	121.00	17.13	0.66
124.00		385.96	123.00	16.96	0.67
125.00	Top - Section 4	191.53	124.50	8.42	0.17
126.00		166.49	125.50	7.32	0.13
128.00		330.57	127.00	14.53	0.53
130.00	Bot - Section 6	327.36	129.00	14.39	0.53
132.00		562.82	131.00	24.73	1.62
134.00		556.39	133.00	24.45	1.63
135.00	Top - Section 5	275.78	134.50	12.12	0.41
136.00		160.56	135.50	7.06	0.14
138.00		318.72	137.00	14.01	0.57
140.00	Top - Section 6	315.50	139.00	13.87	0.57
142.00		268.10	141.00	11.78	0.43
144.00		265.53	143.00	11.67	0.43
146.00		262.96	145.00	11.56	0.43
148.00		260.38	147.00	11.44	0.44
150.00		257.81	149.00	11.33	0.44
152.00		255.24	151.00	11.22	0.44
154.00		252.67	153.00	11.10	0.45
156.00		250.09	155.00	10.99	0.45
158.00		247.52	157.00	10.88	0.45
160.00		244.95	159.00	10.76	0.45
162.00		242.38	161.00	10.65	0.45
164.00		239.80	163.00	10.54	0.46
165.00	Appurtenance(s)	6281.3	164.50	276.04	318.56
166.00		103.32	165.50	4.54	0.09
168.00		204.71	167.00	9.00	0.35
170.00		202.14	169.00	8.88	0.35
172.00		199.56	171.00	8.77	0.35
174.00		196.99	173.00	8.66	0.35
175.00	Appurtenance(s)	3005.8	174.50	132.10	82.09
176.00		93.10	175.50	4.09	0.08
178.00		184.28	177.00	8.10	0.32
180.00	Top - Section 7	181.70	179.00	7.99	0.32
182.00		194.67	181.00	8.55	0.37
184.00		194.67	183.00	8.55	0.38
185.00	Appurtenance(s)	4223.0	184.50	185.59	181.14
186.00		75.83	185.50	3.33	0.06

Seismic Segment Forces (Factored)

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 52

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188.00			151.66	187.00	6.66	0.24		
190.00			151.66	189.00	6.66	0.25		
192.00			151.66	191.00	6.66	0.25		
194.00			151.66	193.00	6.66	0.26		
195.00	Appurtenance(s)		3941.2	194.50	173.21	175.33		
		Totals:	**63,275.5**		**2,780.7**	**798.2**	**Total Wind:**	**43,694.4**

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

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Load Case: 1.2D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.22			**Iterations**	27
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25	**SA**	0.02	**Seismic Importance Factor**	1.00	**S1**	0.06

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-77.11	-0.80	0.00	-151.50	0.00	151.50	5803.10	1561.17	8297.91	7657.05		0.00	0.00	0.033
2.00	-76.27	-0.80	0.00	-149.90	0.00	149.90	5777.89	1549.56	8174.96	7566.71		0.00	0.00	0.033
4.00	-75.43	-0.80	0.00	-148.30	0.00	148.30	5752.42	1537.95	8052.92	7476.52		0.00	0.00	0.033
6.00	-74.60	-0.80	0.00	-146.70	0.00	146.70	5726.67	1526.34	7931.81	7386.49		0.00	-0.01	0.033
8.00	-73.77	-0.81	0.00	-145.09	0.00	145.09	5700.65	1514.73	7811.61	7296.62		0.01	-0.01	0.033
10.00	-72.95	-0.81	0.00	-143.47	0.00	143.47	5674.37	1503.12	7692.32	7206.92		0.01	-0.01	0.033
12.00	-72.13	-0.81	0.00	-141.86	0.00	141.86	5647.82	1491.51	7573.96	7117.40		0.01	-0.01	0.033
14.00	-71.32	-0.81	0.00	-140.23	0.00	140.23	5620.99	1479.91	7456.51	7028.07		0.02	-0.01	0.033
16.00	-70.52	-0.82	0.00	-138.60	0.00	138.60	5593.90	1468.30	7339.98	6938.94		0.03	-0.02	0.033
18.00	-69.72	-0.82	0.00	-136.97	0.00	136.97	5566.54	1456.69	7224.37	6850.01		0.03	-0.02	0.033
20.00	-68.92	-0.82	0.00	-135.33	0.00	135.33	5538.91	1445.08	7109.68	6761.30		0.04	-0.02	0.032
22.00	-68.14	-0.82	0.00	-133.69	0.00	133.69	5511.02	1433.47	6995.90	6672.80		0.05	-0.02	0.032
24.00	-67.35	-0.83	0.00	-132.04	0.00	132.04	5482.85	1421.86	6883.05	6584.53		0.06	-0.02	0.032
26.00	-66.58	-0.83	0.00	-130.39	0.00	130.39	5454.41	1410.25	6771.11	6496.50		0.07	-0.03	0.032
28.00	-65.80	-0.83	0.00	-128.74	0.00	128.74	5425.71	1398.64	6660.08	6408.72		0.08	-0.03	0.032
30.00	-65.04	-0.83	0.00	-127.08	0.00	127.08	5396.74	1387.03	6549.98	6321.18		0.09	-0.03	0.032
32.00	-64.28	-0.83	0.00	-125.42	0.00	125.42	5367.49	1375.42	6440.79	6233.91		0.11	-0.03	0.032
34.00	-63.53	-0.84	0.00	-123.75	0.00	123.75	5337.98	1363.81	6332.52	6146.90		0.12	-0.03	0.032
36.00	-62.78	-0.84	0.00	-122.08	0.00	122.08	5308.20	1352.20	6225.17	6060.17		0.14	-0.04	0.032
38.00	-62.03	-0.84	0.00	-120.41	0.00	120.41	5278.15	1340.59	6118.74	5973.73		0.15	-0.04	0.032
40.00	-61.30	-0.84	0.00	-118.73	0.00	118.73	5247.84	1328.98	6013.22	5887.58		0.17	-0.04	0.032
41.00	-60.93	-0.84	0.00	-117.89	0.00	117.89	5232.58	1323.18	5960.81	5844.61		0.18	-0.04	0.032
42.00	-60.24	-0.84	0.00	-117.05	0.00	117.05	5217.25	1317.37	5908.62	5801.72		0.19	-0.04	0.032
44.00	-58.87	-0.84	0.00	-115.36	0.00	115.36	5186.39	1305.76	5804.94	5716.18		0.21	-0.05	0.032
46.00	-57.51	-0.84	0.00	-113.68	0.00	113.68	5155.27	1294.16	5702.18	5630.95		0.23	-0.05	0.031
48.00	-56.17	-0.84	0.00	-111.99	0.00	111.99	5181.33	1303.87	5788.10	5702.24		0.25	-0.05	0.030
50.00	-55.45	-0.85	0.00	-110.30	0.00	110.30	5150.16	1292.26	5685.49	5617.06		0.27	-0.05	0.030
52.00	-54.73	-0.85	0.00	-108.61	0.00	108.61	5118.73	1280.65	5583.79	5532.21		0.29	-0.06	0.030
54.00	-54.02	-0.85	0.00	-106.92	0.00	106.92	5087.02	1269.04	5483.02	5447.69		0.32	-0.06	0.030
56.00	-53.32	-0.85	0.00	-105.22	0.00	105.22	5055.04	1257.43	5383.16	5363.51		0.34	-0.06	0.030
58.00	-52.62	-0.85	0.00	-103.52	0.00	103.52	5022.80	1245.82	5284.21	5279.69		0.37	-0.06	0.030
60.00	-51.93	-0.85	0.00	-101.82	0.00	101.82	4990.29	1234.21	5186.19	5196.21		0.39	-0.07	0.030
62.00	-51.24	-0.85	0.00	-100.12	0.00	100.12	4957.51	1222.60	5089.08	5113.11		0.42	-0.07	0.030
64.00	-50.56	-0.85	0.00	-98.41	0.00	98.41	4924.46	1210.99	4992.89	5030.38		0.45	-0.07	0.030
66.00	-49.89	-0.86	0.00	-96.70	0.00	96.70	4891.14	1199.39	4897.62	4948.02		0.48	-0.07	0.030
68.00	-49.22	-0.86	0.00	-94.99	0.00	94.99	4857.55	1187.78	4803.27	4866.06		0.51	-0.08	0.030
70.00	-48.56	-0.86	0.00	-93.28	0.00	93.28	4823.69	1176.17	4709.83	4784.49		0.55	-0.08	0.030
72.00	-47.90	-0.86	0.00	-91.57	0.00	91.57	4789.56	1164.56	4617.32	4703.33		0.58	-0.08	0.029
74.00	-47.25	-0.86	0.00	-89.85	0.00	89.85	4755.17	1152.95	4525.72	4622.58		0.61	-0.08	0.029
76.00	-46.60	-0.86	0.00	-88.13	0.00	88.13	4720.51	1141.34	4435.03	4542.26		0.65	-0.09	0.029
78.00	-45.96	-0.86	0.00	-86.41	0.00	86.41	4685.57	1129.73	4345.27	4462.36		0.69	-0.09	0.029
80.00	-45.32	-0.86	0.00	-84.69	0.00	84.69	4650.37	1118.12	4256.42	4382.90		0.72	-0.09	0.029
82.00	-44.69	-0.86	0.00	-82.97	0.00	82.97	4614.90	1106.51	4168.49	4303.88		0.76	-0.10	0.029
84.00	-44.07	-0.86	0.00	-81.25	0.00	81.25	4579.16	1094.90	4081.48	4225.32		0.80	-0.10	0.029
85.00	-43.76	-0.86	0.00	-80.39	0.00	80.39	4561.19	1089.10	4038.32	4186.21		0.83	-0.10	0.029
86.00	-43.18	-0.86	0.00	-79.53	0.00	79.53	4543.15	1083.29	3995.39	4147.21		0.85	-0.10	0.029
88.00	-42.04	-0.86	0.00	-77.80	0.00	77.80	4506.88	1071.68	3910.21	4069.58		0.89	-0.10	0.028

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H
Site Name:	North Salem	**Exposure:**	B
Height:	195.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

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90.00	-40.90	-0.86	0.00	-76.08	0.00	76.08	4470.33	1060.07	3825.95	3992.42	0.93	-0.11	0.028
91.00	-40.34	-0.86	0.00	-75.22	0.00	75.22	4519.12	1075.59	3938.79	4095.67	0.96	-0.11	0.027
92.00	-40.04	-0.86	0.00	-74.37	0.00	74.37	4500.93	1069.79	3896.39	4056.95	0.98	-0.11	0.027
93.00	-39.73	-0.86	0.00	-73.51	0.00	73.51	4482.67	1063.98	3854.22	4018.35	1.00	-0.11	0.027
93.00	-39.73	-0.86	0.00	-73.51	0.00	73.51	3684.61	913.29	3313.08	3312.42	1.00	-0.11	0.033
94.00	-39.47	-0.86	0.00	-72.65	0.00	72.65	3670.68	908.31	3277.08	3281.76	1.03	-0.11	0.033
96.00	-38.94	-0.86	0.00	-70.93	0.00	70.93	3642.60	898.36	3205.67	3220.68	1.07	-0.12	0.033
98.00	-38.41	-0.86	0.00	-69.21	0.00	69.21	3614.26	888.41	3135.05	3159.91	1.12	-0.12	0.033
100.00	-37.89	-0.86	0.00	-67.49	0.00	67.49	3585.64	878.46	3065.22	3099.48	1.17	-0.12	0.032
102.00	-37.38	-0.86	0.00	-65.77	0.00	65.77	3556.76	868.51	2996.17	3039.38	1.23	-0.13	0.032
104.00	-36.87	-0.86	0.00	-64.05	0.00	64.05	3527.61	858.56	2927.90	2979.62	1.28	-0.13	0.032
106.00	-36.36	-0.86	0.00	-62.33	0.00	62.33	3498.19	848.61	2860.43	2920.21	1.33	-0.13	0.032
108.00	-35.86	-0.86	0.00	-60.60	0.00	60.60	3468.50	838.66	2793.74	2861.17	1.39	-0.14	0.032
110.00	-35.36	-0.86	0.00	-58.88	0.00	58.88	3438.54	828.71	2727.83	2802.49	1.45	-0.14	0.031
112.00	-34.87	-0.86	0.00	-57.15	0.00	57.15	3408.31	818.76	2662.72	2744.18	1.51	-0.14	0.031
114.00	-34.39	-0.86	0.00	-55.42	0.00	55.42	3377.82	808.81	2598.39	2686.26	1.57	-0.15	0.031
116.00	-33.91	-0.86	0.00	-53.70	0.00	53.70	3347.05	798.86	2534.84	2628.73	1.63	-0.15	0.031
118.00	-33.43	-0.86	0.00	-51.97	0.00	51.97	3316.02	788.90	2472.09	2571.60	1.70	-0.15	0.030
120.00	-32.96	-0.86	0.00	-50.24	0.00	50.24	3284.72	778.95	2410.12	2514.88	1.76	-0.16	0.030
122.00	-32.49	-0.86	0.00	-48.51	0.00	48.51	3253.15	769.00	2348.93	2458.58	1.83	-0.16	0.030
124.00	-32.03	-0.86	0.00	-46.78	0.00	46.78	3213.32	759.05	2288.53	2396.73	1.90	-0.16	0.029
125.00	-31.80	-0.86	0.00	-45.92	0.00	45.92	3192.26	754.08	2258.63	2365.26	1.93	-0.17	0.029
125.00	-31.80	-0.86	0.00	-45.92	0.00	45.92	2545.46	629.48	1888.72	1892.56	1.93	-0.17	0.037
126.00	-31.60	-0.87	0.00	-45.05	0.00	45.05	2533.76	625.34	1863.92	1871.35	1.97	-0.17	0.037
128.00	-31.21	-0.87	0.00	-43.32	0.00	43.32	2510.17	617.05	1814.81	1829.12	2.04	-0.17	0.036
130.00	-30.82	-0.87	0.00	-41.59	0.00	41.59	2486.30	608.75	1766.36	1787.17	2.11	-0.18	0.036
132.00	-30.14	-0.87	0.00	-39.86	0.00	39.86	2462.17	600.46	1718.57	1745.51	2.19	-0.18	0.035
134.00	-29.46	-0.86	0.00	-38.13	0.00	38.13	2437.77	592.17	1671.43	1704.13	2.26	-0.19	0.034
135.00	-29.13	-0.86	0.00	-37.27	0.00	37.27	2457.60	598.90	1709.65	1737.70	2.30	-0.19	0.033
136.00	-28.94	-0.86	0.00	-36.40	0.00	36.40	2445.41	594.76	1686.06	1717.00	2.34	-0.19	0.033
138.00	-28.56	-0.86	0.00	-34.68	0.00	34.68	2420.82	586.46	1639.37	1675.83	2.42	-0.19	0.032
140.00	-28.18	-0.86	0.00	-32.95	0.00	32.95	2395.97	578.17	1593.34	1634.95	2.50	-0.20	0.032
140.00	-28.18	-0.86	0.00	-32.95	0.00	32.95	1788.19	463.41	1279.47	1224.81	2.50	-0.20	0.043
142.00	-27.87	-0.86	0.00	-31.22	0.00	31.22	1771.85	456.77	1243.10	1196.12	2.59	-0.20	0.042
144.00	-27.56	-0.87	0.00	-29.49	0.00	29.49	1755.23	450.14	1207.26	1167.57	2.67	-0.21	0.041
146.00	-27.25	-0.87	0.00	-27.76	0.00	27.76	1738.36	443.51	1171.94	1139.16	2.76	-0.21	0.040
148.00	-26.94	-0.87	0.00	-26.03	0.00	26.03	1721.21	436.87	1137.14	1110.92	2.85	-0.22	0.039
150.00	-26.64	-0.87	0.00	-24.30	0.00	24.30	1703.79	430.24	1102.87	1082.85	2.94	-0.22	0.038
152.00	-26.34	-0.87	0.00	-22.56	0.00	22.56	1686.10	423.60	1069.12	1054.96	3.04	-0.23	0.037
154.00	-26.04	-0.87	0.00	-20.83	0.00	20.83	1668.15	416.97	1035.89	1027.24	3.13	-0.23	0.036
156.00	-25.75	-0.87	0.00	-19.09	0.00	19.09	1649.92	410.34	1003.19	999.72	3.23	-0.23	0.035
158.00	-25.46	-0.87	0.00	-17.36	0.00	17.36	1631.43	403.70	971.02	972.40	3.33	-0.24	0.033
160.00	-25.17	-0.87	0.00	-15.62	0.00	15.62	1612.67	397.07	939.37	945.29	3.43	-0.24	0.032
162.00	-24.89	-0.87	0.00	-13.88	0.00	13.88	1593.64	390.43	908.24	918.39	3.53	-0.25	0.031
164.00	-24.61	-0.87	0.00	-12.15	0.00	12.15	1574.34	383.80	877.64	891.72	3.64	-0.25	0.029
165.00	-16.80	-0.52	0.00	-11.28	0.00	11.28	1564.59	380.48	862.54	878.47	3.69	-0.25	0.024
166.00	-16.68	-0.52	0.00	-10.76	0.00	10.76	1554.77	377.17	847.56	865.27	3.74	-0.25	0.023
168.00	-16.44	-0.52	0.00	-9.73	0.00	9.73	1534.93	370.53	818.01	839.07	3.85	-0.26	0.022
170.00	-16.20	-0.51	0.00	-8.70	0.00	8.70	1514.83	363.90	788.98	813.12	3.96	-0.26	0.021
172.00	-15.96	-0.51	0.00	-7.67	0.00	7.67	1494.45	357.26	760.48	787.42	4.06	-0.26	0.020
174.00	-15.73	-0.51	0.00	-6.65	0.00	6.65	1473.81	350.63	732.50	761.98	4.17	-0.26	0.019
175.00	-12.00	-0.41	0.00	-6.13	0.00	6.13	1463.38	347.31	718.70	749.37	4.23	-0.26	0.016
176.00	-11.89	-0.41	0.00	-5.72	0.00	5.72	1452.89	344.00	705.04	736.82	4.28	-0.27	0.016
178.00	-11.67	-0.41	0.00	-4.89	0.00	4.89	1428.17	337.36	678.11	710.17	4.40	-0.27	0.015
180.00	-11.45	-0.41	0.00	-4.07	0.00	4.07	1400.09	330.73	651.70	682.38	4.51	-0.27	0.014
180.00	-11.45	-0.41	0.00	-4.07	0.00	4.07	678.42	203.53	25205.7	396.30	4.51	-0.27	0.027
182.00	-11.22	-0.41	0.00	-3.24	0.00	3.24	678.42	203.53	25205.7	396.30	4.62	-0.27	0.025

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 55	

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184.00	-10.99	-0.41	0.00	-2.42	0.00	2.42	678.42	203.53	25205.7	396.30	4.73	-0.27	0.022
185.00	-5.74	-0.20	0.00	-2.01	0.00	2.01	678.42	203.53	25205.7	396.30	4.79	-0.27	0.014
186.00	-5.65	-0.20	0.00	-1.81	0.00	1.81	678.42	203.53	25205.7	396.30	4.85	-0.27	0.013
188.00	-5.46	-0.20	0.00	-1.40	0.00	1.40	678.42	203.53	25205.7	396.30	4.96	-0.27	0.012
190.00	-5.27	-0.20	0.00	-1.00	0.00	1.00	678.42	203.53	25205.7	396.30	5.08	-0.27	0.010
192.00	-5.09	-0.20	0.00	-0.60	0.00	0.60	678.42	203.53	25205.7	396.30	5.19	-0.27	0.009
194.00	-4.90	-0.20	0.00	-0.20	0.00	0.20	678.42	203.53	25205.7	396.30	5.31	-0.27	0.008
195.00	0.00	-0.18	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	5.36	-0.27	0.000

Seismic Segment Forces (Factored)

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 56	

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Load Case: 0.9D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.22	**Iterations**	27
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09	**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25	**SA**	0.02	**S1**	0.06
						Seismic Importance Factor	1.00

R: 1.50

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)
0.00		0.00	0.00	0.00	0.00
2.00		670.41	1.00	29.46	0.00
4.00		665.91	3.00	29.26	0.00
6.00		661.40	5.00	29.07	0.00
8.00		656.90	7.00	28.87	0.01
10.00		652.40	9.00	28.67	0.01
12.00		647.90	11.00	28.47	0.02
14.00		643.40	13.00	28.28	0.02
16.00		638.89	15.00	28.08	0.03
18.00		634.39	17.00	27.88	0.03
20.00		629.89	19.00	27.68	0.04
22.00		625.39	21.00	27.48	0.05
24.00		620.89	23.00	27.29	0.06
26.00		616.38	25.00	27.09	0.07
28.00		611.88	27.00	26.89	0.08
30.00		607.38	29.00	26.69	0.09
32.00		602.88	31.00	26.49	0.11
34.00		598.38	33.00	26.30	0.12
36.00		593.88	35.00	26.10	0.13
38.00		589.37	37.00	25.90	0.14
40.00		584.87	39.00	25.70	0.16
41.00	Bot - Section 2	290.75	40.50	12.78	0.04
42.00		549.75	41.50	24.16	0.16
44.00		1092.7	43.00	48.02	0.66
46.00		1083.7	45.00	47.63	0.72
48.00	Top - Section 1	1074.7	47.00	47.23	0.77
50.00		570.63	49.00	25.08	0.24
52.00		566.13	51.00	24.88	0.25
54.00		561.63	53.00	24.68	0.27
56.00		557.13	55.00	24.48	0.28
58.00		552.62	57.00	24.29	0.30
60.00		548.12	59.00	24.09	0.31
62.00		543.62	61.00	23.89	0.33
64.00		539.12	63.00	23.69	0.35
66.00		534.62	65.00	23.49	0.36
68.00		530.11	67.00	23.30	0.38
70.00		525.61	69.00	23.10	0.40
72.00		521.11	71.00	22.90	0.41
74.00		516.61	73.00	22.70	0.43
76.00		512.11	75.00	22.51	0.44
78.00		507.60	77.00	22.31	0.46
80.00		503.10	79.00	22.11	0.48
82.00		498.60	81.00	21.91	0.49
84.00		494.10	83.00	21.71	0.51
85.00	Bot - Section 3	245.36	84.50	10.78	0.13
86.00		458.97	85.50	20.17	0.46

Seismic Segment Forces (Factored)

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 57

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88.00		911.19	87.00	40.04	1.89
90.00		902.19	89.00	39.65	1.94
91.00	Top - Section 2	447.72	90.50	19.68	0.49
92.00		241.62	91.50	10.62	0.15
93.00	Top - Section 3	240.49	92.50	10.57	0.15
94.00		210.23	93.50	9.24	0.12
96.00		417.56	95.00	18.35	0.47
98.00		413.71	97.00	18.18	0.48
100.00		409.85	99.00	18.01	0.50
102.00		405.99	101.00	17.84	0.51
104.00		402.13	103.00	17.67	0.52
106.00		398.27	105.00	17.50	0.53
108.00		394.41	107.00	17.33	0.54
110.00		390.55	109.00	17.16	0.54
112.00		386.69	111.00	16.99	0.55
114.00		382.83	113.00	16.82	0.56
116.00		378.98	115.00	16.65	0.57
118.00		375.12	117.00	16.49	0.58
120.00		371.26	119.00	16.32	0.59
122.00		367.40	121.00	16.15	0.59
124.00		363.54	123.00	15.98	0.60
125.00	Top - Section 4	180.32	124.50	7.92	0.15
126.00		155.28	125.50	6.82	0.11
128.00		308.15	127.00	13.54	0.46
130.00	Bot - Section 6	304.94	129.00	13.40	0.47
132.00		540.40	131.00	23.75	1.51
134.00		533.96	133.00	23.47	1.52
135.00	Top - Section 5	264.57	134.50	11.63	0.38
136.00		149.35	135.50	6.56	0.12
138.00		296.29	137.00	13.02	0.50
140.00	Top - Section 6	293.08	139.00	12.88	0.50
142.00		245.68	141.00	10.80	0.36
144.00		243.11	143.00	10.68	0.36
146.00		240.54	145.00	10.57	0.37
148.00		237.96	147.00	10.46	0.37
150.00		235.39	149.00	10.34	0.37
152.00		232.82	151.00	10.23	0.37
154.00		230.25	153.00	10.12	0.37
156.00		227.67	155.00	10.01	0.37
158.00		225.10	157.00	9.89	0.38
160.00		222.53	159.00	9.78	0.38
162.00		219.96	161.00	9.67	0.38
164.00		217.38	163.00	9.55	0.38
165.00	Appurtenance(s)	6270.1	164.50	275.55	319.91
166.00		95.85	165.50	4.21	0.08
168.00		189.77	167.00	8.34	0.30
170.00		187.20	169.00	8.23	0.30
172.00		184.63	171.00	8.11	0.30
174.00		182.06	173.00	8.00	0.30
175.00	Appurtenance(s)	2998.3	174.50	131.77	82.32
176.00		86.58	175.50	3.80	0.07
178.00		171.23	177.00	7.53	0.28
180.00	Top - Section 7	168.66	179.00	7.41	0.27
182.00		181.63	181.00	7.98	0.32
184.00		181.63	183.00	7.98	0.33
185.00	Appurtenance(s)	4216.5	184.50	185.30	181.99
186.00		74.68	185.50	3.28	0.06

Seismic Segment Forces (Factored)

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 58

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188.00			149.37	187.00	6.56	0.23		
190.00			149.37	189.00	6.56	0.24		
192.00			149.37	191.00	6.56	0.24		
194.00			149.37	193.00	6.56	0.25		
195.00	Appurtenance(s)		3940.1	194.50	173.15	176.60		
		Totals:	**61,274.4**		**2,692.8**	**798.2**	**Total Wind:**	**43,694.4**

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 59	

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Load Case: 0.9D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.22			**Iterations**	27
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.25	**SA**	0.02	**Seismic Importance Factor**	1.00	**S1**	0.06

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.44	-0.80	0.00	-148.46	0.00	148.46	5803.10	1561.17	8297.91	7657.05		0.00	0.00	0.029
2.00	-57.80	-0.80	0.00	-146.86	0.00	146.86	5777.89	1549.56	8174.96	7566.71		0.00	0.00	0.029
4.00	-57.17	-0.80	0.00	-145.26	0.00	145.26	5752.42	1537.95	8052.92	7476.52		0.00	0.00	0.029
6.00	-56.53	-0.80	0.00	-143.66	0.00	143.66	5726.67	1526.34	7931.81	7386.49		0.00	-0.01	0.029
8.00	-55.91	-0.80	0.00	-142.06	0.00	142.06	5700.65	1514.73	7811.61	7296.62		0.01	-0.01	0.029
10.00	-55.28	-0.81	0.00	-140.45	0.00	140.45	5674.37	1503.12	7692.32	7206.92		0.01	-0.01	0.029
12.00	-54.67	-0.81	0.00	-138.83	0.00	138.83	5647.82	1491.51	7573.96	7117.40		0.01	-0.01	0.029
14.00	-54.05	-0.81	0.00	-137.22	0.00	137.22	5620.99	1479.91	7456.51	7028.07		0.02	-0.01	0.029
16.00	-53.44	-0.81	0.00	-135.60	0.00	135.60	5593.90	1468.30	7339.98	6938.94		0.03	-0.02	0.029
18.00	-52.84	-0.81	0.00	-133.97	0.00	133.97	5566.54	1456.69	7224.37	6850.01		0.03	-0.02	0.029
20.00	-52.24	-0.81	0.00	-132.35	0.00	132.35	5538.91	1445.08	7109.68	6761.30		0.04	-0.02	0.029
22.00	-51.64	-0.82	0.00	-130.72	0.00	130.72	5511.02	1433.47	6995.90	6672.80		0.05	-0.02	0.029
24.00	-51.05	-0.82	0.00	-129.09	0.00	129.09	5482.85	1421.86	6883.05	6584.53		0.06	-0.02	0.029
26.00	-50.46	-0.82	0.00	-127.45	0.00	127.45	5454.41	1410.25	6771.11	6496.50		0.07	-0.03	0.029
28.00	-49.87	-0.82	0.00	-125.81	0.00	125.81	5425.71	1398.64	6660.08	6408.72		0.08	-0.03	0.029
30.00	-49.29	-0.82	0.00	-124.17	0.00	124.17	5396.74	1387.03	6549.98	6321.18		0.09	-0.03	0.029
32.00	-48.72	-0.82	0.00	-122.52	0.00	122.52	5367.49	1375.42	6440.79	6233.91		0.10	-0.03	0.029
34.00	-48.14	-0.83	0.00	-120.88	0.00	120.88	5337.98	1363.81	6332.52	6146.90		0.12	-0.03	0.029
36.00	-47.58	-0.83	0.00	-119.23	0.00	119.23	5308.20	1352.20	6225.17	6060.17		0.13	-0.04	0.029
38.00	-47.01	-0.83	0.00	-117.57	0.00	117.57	5278.15	1340.59	6118.74	5973.73		0.15	-0.04	0.029
40.00	-46.46	-0.83	0.00	-115.92	0.00	115.92	5247.84	1328.98	6013.22	5887.58		0.16	-0.04	0.029
41.00	-46.18	-0.83	0.00	-115.09	0.00	115.09	5232.58	1323.18	5960.81	5844.61		0.17	-0.04	0.029
42.00	-45.66	-0.83	0.00	-114.26	0.00	114.26	5217.25	1317.37	5908.62	5801.72		0.18	-0.04	0.028
44.00	-44.62	-0.83	0.00	-112.60	0.00	112.60	5186.39	1305.76	5804.94	5716.18		0.20	-0.05	0.028
46.00	-43.59	-0.83	0.00	-110.94	0.00	110.94	5155.27	1294.16	5702.18	5630.95		0.22	-0.05	0.028
48.00	-42.57	-0.83	0.00	-109.27	0.00	109.27	5181.33	1303.87	5788.10	5702.24		0.24	-0.05	0.027
50.00	-42.02	-0.83	0.00	-107.61	0.00	107.61	5150.16	1292.26	5685.49	5617.06		0.26	-0.05	0.027
52.00	-41.48	-0.83	0.00	-105.95	0.00	105.95	5118.73	1280.65	5583.79	5532.21		0.28	-0.05	0.027
54.00	-40.94	-0.83	0.00	-104.28	0.00	104.28	5087.02	1269.04	5483.02	5447.69		0.31	-0.06	0.027
56.00	-40.41	-0.83	0.00	-102.61	0.00	102.61	5055.04	1257.43	5383.16	5363.51		0.33	-0.06	0.027
58.00	-39.88	-0.84	0.00	-100.94	0.00	100.94	5022.80	1245.82	5284.21	5279.69		0.36	-0.06	0.027
60.00	-39.36	-0.84	0.00	-99.27	0.00	99.27	4990.29	1234.21	5186.19	5196.21		0.38	-0.06	0.027
62.00	-38.84	-0.84	0.00	-97.60	0.00	97.60	4957.51	1222.60	5089.08	5113.11		0.41	-0.07	0.027
64.00	-38.32	-0.84	0.00	-95.92	0.00	95.92	4924.46	1210.99	4992.89	5030.38		0.44	-0.07	0.027
66.00	-37.81	-0.84	0.00	-94.25	0.00	94.25	4891.14	1199.39	4897.62	4948.02		0.47	-0.07	0.027
68.00	-37.30	-0.84	0.00	-92.57	0.00	92.57	4857.55	1187.78	4803.27	4866.06		0.50	-0.07	0.027
70.00	-36.80	-0.84	0.00	-90.89	0.00	90.89	4823.69	1176.17	4709.83	4784.49		0.53	-0.08	0.027
72.00	-36.30	-0.84	0.00	-89.21	0.00	89.21	4789.56	1164.56	4617.32	4703.33		0.57	-0.08	0.027
74.00	-35.81	-0.84	0.00	-87.53	0.00	87.53	4755.17	1152.95	4525.72	4622.58		0.60	-0.08	0.026
76.00	-35.32	-0.84	0.00	-85.85	0.00	85.85	4720.51	1141.34	4435.03	4542.26		0.63	-0.08	0.026
78.00	-34.83	-0.84	0.00	-84.17	0.00	84.17	4685.57	1129.73	4345.27	4462.36		0.67	-0.09	0.026
80.00	-34.35	-0.84	0.00	-82.48	0.00	82.48	4650.37	1118.12	4256.42	4382.90		0.71	-0.09	0.026
82.00	-33.87	-0.84	0.00	-80.80	0.00	80.80	4614.90	1106.51	4168.49	4303.88		0.75	-0.09	0.026
84.00	-33.40	-0.84	0.00	-79.11	0.00	79.11	4579.16	1094.90	4081.48	4225.32		0.79	-0.10	0.026
85.00	-33.16	-0.84	0.00	-78.27	0.00	78.27	4561.19	1089.10	4038.32	4186.21		0.81	-0.10	0.026
86.00	-32.73	-0.84	0.00	-77.43	0.00	77.43	4543.15	1083.29	3995.39	4147.21		0.83	-0.10	0.026
88.00	-31.86	-0.84	0.00	-75.74	0.00	75.74	4506.88	1071.68	3910.21	4069.58		0.87	-0.10	0.026

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 60	

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90.00	-31.00	-0.84	0.00	-74.06	0.00	74.06	4470.33	1060.07	3825.95	3992.42	0.91	-0.10	0.025
91.00	-30.58	-0.84	0.00	-73.22	0.00	73.22	4519.12	1075.59	3938.79	4095.67	0.93	-0.11	0.025
92.00	-30.34	-0.84	0.00	-72.38	0.00	72.38	4500.93	1069.79	3896.39	4056.95	0.96	-0.11	0.025
93.00	-30.11	-0.84	0.00	-71.54	0.00	71.54	4482.67	1063.98	3854.22	4018.35	0.98	-0.11	0.025
93.00	-30.11	-0.84	0.00	-71.54	0.00	71.54	3684.61	913.29	3313.08	3312.42	0.98	-0.11	0.030
94.00	-29.91	-0.84	0.00	-70.70	0.00	70.70	3670.68	908.31	3277.08	3281.76	1.00	-0.11	0.030
96.00	-29.51	-0.84	0.00	-69.03	0.00	69.03	3642.60	898.36	3205.67	3220.68	1.05	-0.11	0.030
98.00	-29.11	-0.84	0.00	-67.35	0.00	67.35	3614.26	888.41	3135.05	3159.91	1.10	-0.12	0.029
100.00	-28.72	-0.84	0.00	-65.67	0.00	65.67	3585.64	878.46	3065.22	3099.48	1.15	-0.12	0.029
102.00	-28.33	-0.84	0.00	-63.98	0.00	63.98	3556.76	868.51	2996.17	3039.38	1.20	-0.12	0.029
104.00	-27.94	-0.84	0.00	-62.30	0.00	62.30	3527.61	858.56	2927.90	2979.62	1.25	-0.13	0.029
106.00	-27.56	-0.84	0.00	-60.62	0.00	60.62	3498.19	848.61	2860.43	2920.21	1.30	-0.13	0.029
108.00	-27.18	-0.84	0.00	-58.94	0.00	58.94	3468.50	838.66	2793.74	2861.17	1.36	-0.13	0.028
110.00	-26.81	-0.84	0.00	-57.25	0.00	57.25	3438.54	828.71	2727.83	2802.49	1.41	-0.14	0.028
112.00	-26.44	-0.84	0.00	-55.57	0.00	55.57	3408.31	818.76	2662.72	2744.18	1.47	-0.14	0.028
114.00	-26.07	-0.84	0.00	-53.89	0.00	53.89	3377.82	808.81	2598.39	2686.26	1.53	-0.14	0.028
116.00	-25.70	-0.84	0.00	-52.20	0.00	52.20	3347.05	798.86	2534.84	2628.73	1.59	-0.15	0.028
118.00	-25.34	-0.84	0.00	-50.52	0.00	50.52	3316.02	788.90	2472.09	2571.60	1.65	-0.15	0.027
120.00	-24.98	-0.84	0.00	-48.83	0.00	48.83	3284.72	778.95	2410.12	2514.88	1.72	-0.15	0.027
122.00	-24.63	-0.84	0.00	-47.15	0.00	47.15	3253.15	769.00	2348.93	2458.58	1.78	-0.16	0.027
124.00	-24.28	-0.84	0.00	-45.46	0.00	45.46	3213.32	759.05	2288.53	2396.73	1.85	-0.16	0.027
125.00	-24.11	-0.84	0.00	-44.62	0.00	44.62	3192.26	754.08	2258.63	2365.26	1.88	-0.16	0.026
125.00	-24.11	-0.84	0.00	-44.62	0.00	44.62	2545.46	629.48	1888.72	1892.56	1.88	-0.16	0.033
126.00	-23.96	-0.84	0.00	-43.78	0.00	43.78	2533.76	625.34	1863.92	1871.35	1.92	-0.16	0.033
128.00	-23.66	-0.84	0.00	-42.10	0.00	42.10	2510.17	617.05	1814.81	1829.12	1.99	-0.17	0.032
130.00	-23.37	-0.84	0.00	-40.41	0.00	40.41	2486.30	608.75	1766.36	1787.17	2.06	-0.17	0.032
132.00	-22.85	-0.84	0.00	-38.72	0.00	38.72	2462.17	600.46	1718.57	1745.51	2.13	-0.18	0.031
134.00	-22.34	-0.84	0.00	-37.04	0.00	37.04	2437.77	592.17	1671.43	1704.13	2.21	-0.18	0.031
135.00	-22.08	-0.84	0.00	-36.20	0.00	36.20	2457.60	598.90	1709.65	1737.70	2.25	-0.18	0.030
136.00	-21.94	-0.84	0.00	-35.36	0.00	35.36	2445.41	594.76	1686.06	1717.00	2.28	-0.19	0.030
138.00	-21.65	-0.84	0.00	-33.68	0.00	33.68	2420.82	586.46	1639.37	1675.83	2.36	-0.19	0.029
140.00	-21.37	-0.84	0.00	-32.00	0.00	32.00	2395.97	578.17	1593.34	1634.95	2.44	-0.19	0.028
140.00	-21.37	-0.84	0.00	-32.00	0.00	32.00	1788.19	463.41	1279.47	1224.81	2.44	-0.19	0.038
142.00	-21.13	-0.84	0.00	-30.32	0.00	30.32	1771.85	456.77	1243.10	1196.12	2.53	-0.20	0.037
144.00	-20.90	-0.84	0.00	-28.63	0.00	28.63	1755.23	450.14	1207.26	1167.57	2.61	-0.20	0.036
146.00	-20.66	-0.84	0.00	-26.95	0.00	26.95	1738.36	443.51	1171.94	1139.16	2.69	-0.21	0.036
148.00	-20.43	-0.84	0.00	-25.27	0.00	25.27	1721.21	436.87	1137.14	1110.92	2.78	-0.21	0.035
150.00	-20.20	-0.84	0.00	-23.58	0.00	23.58	1703.79	430.24	1102.87	1082.85	2.87	-0.22	0.034
152.00	-19.97	-0.84	0.00	-21.90	0.00	21.90	1686.10	423.60	1069.12	1054.96	2.96	-0.22	0.033
154.00	-19.75	-0.84	0.00	-20.21	0.00	20.21	1668.15	416.97	1035.89	1027.24	3.06	-0.22	0.032
156.00	-19.53	-0.84	0.00	-18.52	0.00	18.52	1649.92	410.34	1003.19	999.72	3.15	-0.23	0.030
158.00	-19.31	-0.84	0.00	-16.84	0.00	16.84	1631.43	403.70	971.02	972.40	3.25	-0.23	0.029
160.00	-19.09	-0.84	0.00	-15.15	0.00	15.15	1612.67	397.07	939.37	945.29	3.35	-0.24	0.028
162.00	-18.88	-0.84	0.00	-13.46	0.00	13.46	1593.64	390.43	908.24	918.39	3.44	-0.24	0.027
164.00	-18.67	-0.84	0.00	-11.78	0.00	11.78	1574.34	383.80	877.64	891.72	3.55	-0.24	0.025
165.00	-12.75	-0.50	0.00	-10.93	0.00	10.93	1564.59	380.48	862.54	878.47	3.60	-0.24	0.021
166.00	-12.65	-0.50	0.00	-10.43	0.00	10.43	1554.77	377.17	847.56	865.27	3.65	-0.25	0.020
168.00	-12.47	-0.50	0.00	-9.44	0.00	9.44	1534.93	370.53	818.01	839.07	3.75	-0.25	0.019
170.00	-12.29	-0.50	0.00	-8.44	0.00	8.44	1514.83	363.90	788.98	813.12	3.86	-0.25	0.018
172.00	-12.11	-0.50	0.00	-7.45	0.00	7.45	1494.45	357.26	760.48	787.42	3.96	-0.25	0.018
174.00	-11.93	-0.50	0.00	-6.45	0.00	6.45	1473.81	350.63	732.50	761.98	4.07	-0.26	0.017
175.00	-9.10	-0.40	0.00	-5.96	0.00	5.96	1463.38	347.31	718.70	749.37	4.12	-0.26	0.014
176.00	-9.02	-0.40	0.00	-5.56	0.00	5.56	1452.89	344.00	705.04	736.82	4.18	-0.26	0.014
178.00	-8.85	-0.40	0.00	-4.75	0.00	4.75	1428.17	337.36	678.11	710.17	4.29	-0.26	0.013
180.00	-8.69	-0.40	0.00	-3.95	0.00	3.95	1400.09	330.73	651.70	682.38	4.39	-0.26	0.012
180.00	-8.69	-0.40	0.00	-3.95	0.00	3.95	678.42	203.53	25205.7	396.30	4.39	-0.26	0.023
182.00	-8.51	-0.40	0.00	-3.15	0.00	3.15	678.42	203.53	25205.7	396.30	4.50	-0.26	0.021

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 61

Tower Engineering Solutions

184.00	-8.34	-0.40	0.00	-2.36	0.00	2.36	678.42	203.53	25205.7	396.30	4.62	-0.26	0.018
185.00	-4.36	-0.20	0.00	-1.96	0.00	1.96	678.42	203.53	25205.7	396.30	4.67	-0.26	0.011
186.00	-4.29	-0.20	0.00	-1.76	0.00	1.76	678.42	203.53	25205.7	396.30	4.73	-0.27	0.011
188.00	-4.14	-0.20	0.00	-1.37	0.00	1.37	678.42	203.53	25205.7	396.30	4.84	-0.27	0.010
190.00	-4.00	-0.20	0.00	-0.97	0.00	0.97	678.42	203.53	25205.7	396.30	4.95	-0.27	0.008
192.00	-3.86	-0.19	0.00	-0.58	0.00	0.58	678.42	203.53	25205.7	396.30	5.06	-0.27	0.007
194.00	-3.72	-0.19	0.00	-0.19	0.00	0.19	678.42	203.53	25205.7	396.30	5.17	-0.27	0.006
195.00	0.00	-0.18	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	5.23	-0.27	0.000

Wind Loading - Shaft

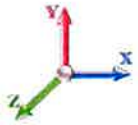
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 62	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	5.417	5.96	272.33	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	5.417	5.96	270.32	0.772 *	0.000	2.00	10.876	8.40	50.0	0.0	603.1
4.00		1.00	0.70	5.417	5.96	268.31	0.774 *	0.000	2.00	10.795	8.36	49.8	0.0	598.6
6.00		1.00	0.70	5.417	5.96	266.30	0.776 *	0.000	2.00	10.714	8.31	49.5	0.0	594.1
8.00		1.00	0.70	5.417	5.96	264.28	0.778 *	0.000	2.00	10.634	8.27	49.3	0.0	589.6
10.00		1.00	0.70	5.417	5.96	262.27	0.780 *	0.000	2.00	10.553	8.23	49.1	0.0	585.1
12.00		1.00	0.70	5.417	5.96	260.26	0.782 *	0.000	2.00	10.472	8.19	48.8	0.0	580.6
14.00		1.00	0.70	5.417	5.96	258.25	0.784 *	0.000	2.00	10.392	8.15	48.6	0.0	576.1
16.00		1.00	0.70	5.417	5.96	256.24	0.786 *	0.000	2.00	10.311	8.11	48.3	0.0	571.6
18.00		1.00	0.70	5.417	5.96	254.23	0.789 *	0.000	2.00	10.231	8.07	48.1	0.0	567.1
20.00		1.00	0.70	5.417	5.96	252.22	0.791 *	0.000	2.00	10.150	8.03	47.8	0.0	562.6
22.00		1.00	0.70	5.417	5.96	250.21	0.793 *	0.000	2.00	10.069	7.99	47.6	0.0	558.1
24.00		1.00	0.70	5.417	5.96	248.19	0.795 *	0.000	2.00	9.989	7.94	47.3	0.0	553.6
26.00		1.00	0.70	5.417	5.96	246.18	0.798 *	0.000	2.00	9.908	7.90	47.1	0.0	549.1
28.00		1.00	0.70	5.417	5.96	244.17	0.800 *	0.000	2.00	9.827	7.86	46.8	0.0	544.6
30.00		1.00	0.70	5.422	5.96	242.26	0.802 *	0.000	2.00	9.747	7.82	46.6	0.0	540.1
32.00		1.00	0.71	5.523	6.08	242.47	0.805 *	0.000	2.00	9.666	7.78	47.3	0.0	535.6
34.00		1.00	0.73	5.619	6.18	242.54	0.807 *	0.000	2.00	9.586	7.74	47.8	0.0	531.1
36.00		1.00	0.74	5.712	6.28	242.46	0.810 *	0.000	2.00	9.505	7.70	48.4	0.0	526.6
38.00		1.00	0.75	5.801	6.38	242.26	0.812 *	0.000	2.00	9.424	7.66	48.8	0.0	522.1
40.00		1.00	0.76	5.887	6.48	241.94	0.815 *	0.000	2.00	9.344	7.61	49.3	0.0	517.6
41.00	Bot - Section 2	1.00	0.77	5.928	6.52	241.75	0.817 *	0.000	1.00	4.642	3.79	24.7	0.0	257.1
42.00		1.00	0.77	5.969	6.57	241.52	0.818 *	0.000	1.00	4.695	3.84	25.2	0.0	516.1
44.00		1.00	0.78	6.049	6.65	241.01	0.820 *	0.000	2.00	9.331	7.65	50.9	0.0	1025.5
46.00		1.00	0.79	6.126	6.74	240.40	0.823 *	0.000	2.00	9.250	7.61	51.3	0.0	1016.5
48.00	Top - Section 1	1.00	0.80	6.201	6.82	239.72	0.826 *	0.000	2.00	9.169	7.57	51.7	0.0	1007.5
50.00		1.00	0.81	6.274	6.90	242.93	0.823 *	0.000	2.00	9.089	7.48	51.7	0.0	503.4
52.00		1.00	0.82	6.345	6.98	242.12	0.826 *	0.000	2.00	9.008	7.44	51.9	0.0	498.9
54.00		1.00	0.83	6.414	7.05	241.24	0.829 *	0.000	2.00	8.927	7.40	52.2	0.0	494.4
56.00		1.00	0.84	6.481	7.13	240.30	0.754 *	0.000	2.00	8.847	6.67	47.6	0.0	489.9
58.00		1.00	0.85	6.546	7.20	239.29	0.730	0.000	2.00	8.766	6.40	46.1	0.0	485.4
60.00		1.00	0.85	6.610	7.27	238.23	0.730	0.000	2.00	8.686	6.34	46.1	0.0	480.9
62.00		1.00	0.86	6.672	7.34	237.12	0.730	0.000	2.00	8.605	6.28	46.1	0.0	476.4
64.00		1.00	0.87	6.733	7.41	235.96	0.730	0.000	2.00	8.524	6.22	46.1	0.0	471.9
66.00		1.00	0.88	6.792	7.47	234.74	0.730	0.000	2.00	8.444	6.16	46.1	0.0	467.3
68.00		1.00	0.89	6.850	7.54	233.48	0.730	0.000	2.00	8.363	6.11	46.0	0.0	462.8
70.00		1.00	0.89	6.907	7.60	232.18	0.730	0.000	2.00	8.282	6.05	45.9	0.0	458.3
72.00		1.00	0.90	6.963	7.66	230.84	0.730	0.000	2.00	8.202	5.99	45.9	0.0	453.8
74.00		1.00	0.91	7.018	7.72	229.45	0.730	0.000	2.00	8.121	5.93	45.8	0.0	449.3
76.00		1.00	0.91	7.071	7.78	228.03	0.730	0.000	2.00	8.041	5.87	45.7	0.0	444.8
78.00		1.00	0.92	7.124	7.84	226.57	0.730	0.000	2.00	7.960	5.81	45.5	0.0	440.3
80.00		1.00	0.93	7.176	7.89	225.08	0.730	0.000	2.00	7.879	5.75	45.4	0.0	435.8
82.00		1.00	0.93	7.227	7.95	223.55	0.730	0.000	2.00	7.799	5.69	45.3	0.0	431.3
84.00		1.00	0.94	7.277	8.00	221.99	0.730	0.000	2.00	7.718	5.63	45.1	0.0	426.8
85.00	Bot - Section 3	1.00	0.94	7.301	8.03	221.20	0.730	0.000	1.00	3.829	2.80	22.4	0.0	211.7
86.00		1.00	0.95	7.326	8.06	220.40	0.730	0.000	1.00	3.883	2.83	22.8	0.0	425.3
88.00		1.00	0.95	7.374	8.11	218.78	0.730	0.000	2.00	7.705	5.62	45.6	0.0	843.9

Wind Loading - Shaft

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

TES Tower Engineering Solutions

90.00	1.00	0.96	7.421	8.16	217.13	0.730	0.000	2.00	7.624	5.57	45.4	0.0	834.9
91.00 Top - Section 2	1.00	0.96	7.445	8.19	216.29	0.730	0.000	1.00	3.782	2.76	22.6	0.0	414.1
92.00	1.00	0.96	7.468	8.21	219.79	0.730	0.000	1.00	3.762	2.75	22.6	0.0	208.0
93.00 Top - Section 3	1.00	0.97	7.491	8.24	218.94	0.730	0.000	1.00	3.742	2.73	22.5	0.0	206.9
94.00	1.00	0.97	7.514	8.27	218.09	0.730	0.000	1.00	3.721	2.72	22.5	0.0	176.6
96.00	1.00	0.98	7.559	8.32	216.37	0.730	0.000	2.00	7.382	5.39	44.8	0.0	350.3
98.00	1.00	0.98	7.604	8.36	214.63	0.730	0.000	2.00	7.302	5.33	44.6	0.0	346.4
100.00	1.00	0.99	7.648	8.41	212.86	0.730	0.000	2.00	7.221	5.27	44.3	0.0	342.6
102.00	1.00	0.99	7.692	8.46	211.07	0.730	0.000	2.00	7.141	5.21	44.1	0.0	338.7
104.00	1.00	1.00	7.734	8.51	209.25	0.730	0.000	2.00	7.060	5.15	43.8	0.0	334.9
106.00	1.00	1.00	7.777	8.55	207.41	0.730	0.000	2.00	6.979	5.09	43.6	0.0	331.0
108.00	1.00	1.01	7.818	8.60	205.55	0.730	0.000	2.00	6.899	5.04	43.3	0.0	327.1
110.00	1.00	1.02	7.859	8.65	203.67	0.730	0.000	2.00	6.818	4.98	43.0	0.0	323.3
112.00	1.00	1.02	7.900	8.69	201.76	0.730	0.000	2.00	6.737	4.92	42.7	0.0	319.4
114.00	1.00	1.03	7.940	8.73	199.84	0.730	0.000	2.00	6.657	4.86	42.4	0.0	315.6
116.00	1.00	1.03	7.979	8.78	197.89	0.733 *	0.000	2.00	6.576	4.82	42.3	0.0	311.7
118.00	1.00	1.04	8.019	8.82	195.93	0.736 *	0.000	2.00	6.496	4.78	42.2	0.0	307.9
120.00	1.00	1.04	8.057	8.86	193.95	0.739 *	0.000	2.00	6.415	4.74	42.0	0.0	304.0
122.00	1.00	1.05	8.095	8.90	191.95	0.741 *	0.000	2.00	6.334	4.70	41.8	0.0	300.1
124.00	1.00	1.05	8.133	8.95	189.93	0.744 *	0.000	2.00	6.254	4.66	41.7	0.0	296.3
125.00 Top - Section 4	1.00	1.05	8.152	8.97	188.91	0.747 *	0.000	1.00	3.097	2.31	20.7	0.0	146.7
126.00	1.00	1.06	8.170	8.99	187.89	0.748 *	0.000	1.00	3.076	2.30	20.7	0.0	121.6
128.00	1.00	1.06	8.207	9.03	185.84	0.751 *	0.000	2.00	6.092	4.57	41.3	0.0	240.9
130.00 Bot - Section 6	1.00	1.07	8.244	9.07	183.77	0.754 *	0.000	2.00	6.012	4.53	41.1	0.0	237.7
132.00	1.00	1.07	8.280	9.11	181.69	0.757 *	0.000	2.00	6.037	4.57	41.6	0.0	473.1
134.00	1.00	1.07	8.315	9.15	179.59	0.761 *	0.000	2.00	5.956	4.53	41.4	0.0	466.7
135.00 Top - Section 5	1.00	1.08	8.333	9.17	178.53	0.763 *	0.000	1.00	2.948	2.25	20.6	0.0	230.9
136.00	1.00	1.08	8.350	9.19	180.75	0.760 *	0.000	1.00	2.928	2.23	20.4	0.0	115.7
138.00	1.00	1.08	8.385	9.22	178.62	0.763 *	0.000	2.00	5.795	4.42	40.8	0.0	229.0
140.00 Top - Section 6	1.00	1.09	8.420	9.26	176.48	0.766 *	0.000	2.00	5.714	4.38	40.6	0.0	225.8
142.00	1.00	1.09	8.454	9.30	174.33	0.770 *	0.000	2.00	5.634	4.34	40.3	0.0	178.4
144.00	1.00	1.10	8.488	9.34	172.16	0.730	0.000	2.00	5.553	4.05	37.8	0.0	175.8
146.00	1.00	1.10	8.521	9.37	169.97	0.730	0.000	2.00	5.473	4.00	37.4	0.0	173.3
148.00	1.00	1.11	8.555	9.41	167.78	0.730	0.000	2.00	5.392	3.94	37.0	0.0	170.7
150.00	1.00	1.11	8.588	9.45	165.57	0.730	0.000	2.00	5.311	3.88	36.6	0.0	168.1
152.00	1.00	1.11	8.620	9.48	163.34	0.730	0.000	2.00	5.231	3.82	36.2	0.0	165.6
154.00	1.00	1.12	8.652	9.52	161.11	0.730	0.000	2.00	5.150	3.76	35.8	0.0	163.0
156.00	1.00	1.12	8.684	9.55	158.86	0.730	0.000	2.00	5.069	3.70	35.4	0.0	160.4
158.00	1.00	1.13	8.716	9.59	156.59	0.730	0.000	2.00	4.989	3.64	34.9	0.0	157.8
160.00	1.00	1.13	8.747	9.62	154.32	0.730	0.000	2.00	4.908	3.58	34.5	0.0	155.3
162.00	1.00	1.13	8.778	9.66	152.03	0.730	0.000	2.00	4.828	3.52	34.0	0.0	152.7
164.00	1.00	1.14	8.809	9.69	149.74	0.730	0.000	2.00	4.747	3.47	33.6	0.0	150.1
165.00 Appurtenance(s)	1.00	1.14	8.825	9.71	148.58	0.730	0.000	1.00	2.343	1.71	16.6	0.0	74.1
166.00	1.00	1.14	8.840	9.72	147.43	0.730	0.000	1.00	2.323	1.70	16.5	0.0	73.5
168.00	1.00	1.15	8.870	9.76	145.11	0.730	0.000	2.00	4.586	3.35	32.7	0.0	145.0
170.00	1.00	1.15	8.900	9.79	142.77	0.730	0.000	2.00	4.505	3.29	32.2	0.0	142.4
172.00	1.00	1.15	8.930	9.82	140.43	0.730	0.000	2.00	4.425	3.23	31.7	0.0	139.8
174.00	1.00	1.16	8.960	9.86	138.07	0.730	0.000	2.00	4.344	3.17	31.3	0.0	137.3
175.00 Appurtenance(s)	1.00	1.16	8.974	9.87	136.89	0.730	0.000	1.00	2.142	1.56	15.4	0.0	67.7
176.00	1.00	1.16	8.989	9.89	135.71	0.730	0.000	1.00	2.122	1.55	15.3	0.0	67.0
178.00	1.00	1.17	9.018	9.92	133.33	0.730	0.000	2.00	4.183	3.05	30.3	0.0	132.1
180.00 Top - Section 7	1.00	1.17	9.047	9.95	130.95	1.200 *	0.000	2.00	4.102	4.92	49.0	0.0	129.5
182.00	1.00	1.17	9.075	9.98	129.16	1.200 *	0.000	2.00	4.000	4.80	47.9	0.0	142.5
184.00	1.00	1.18	9.104	10.01	129.36	0.600	0.000	2.00	4.000	2.40	24.0	0.0	142.5
185.00 Appurtenance(s)	1.00	1.18	9.118	10.03	129.46	0.600	0.000	1.00	2.000	1.20	12.0	0.0	71.3
186.00	1.00	1.18	9.132	10.05	129.56	0.600	0.000	1.00	2.000	1.20	12.1	0.0	71.3
188.00	1.00	1.18	9.160	10.08	129.76	0.600	0.000	2.00	4.000	2.40	24.2	0.0	142.5

Wind Loading - Shaft

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 64

Tower Engineering Solutions

190.00	1.00	1.19	9.188	10.11	129.96	0.600	0.000	2.00	4.000	2.40	24.3	0.0	142.5
192.00	1.00	1.19	9.215	10.14	130.15	0.600	0.000	2.00	4.000	2.40	24.3	0.0	142.5
194.00	1.00	1.19	9.242	10.17	130.34	0.600	0.000	2.00	4.000	2.40	24.4	0.0	142.5
195.00 Appurtenance(s)	1.00	1.20	9.256	10.18	130.44	0.600	0.000	1.00	2.000	1.20	12.2	0.0	71.3
							Totals:	**195.00**			**4,127.1**		**38,209.1**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

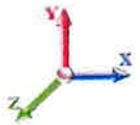
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 65	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	HRK12 (Handrail Kit)	1	9.256	10.182	1.00	1.00	6.75	261.72	0.000	0.000	68.73	0.00	0.00
2	195.00	Low Profile	1	9.256	10.182	1.00	1.00	26.00	1800.00	0.000	0.000	264.72	0.00	0.00
3	195.00	PRK-1245 (kicker kit)	1	9.256	10.182	1.00	1.00	9.50	464.91	0.000	0.000	96.73	0.00	0.00
4	195.00	(3) SFS-H-L (V-Braces)	1	9.256	10.182	1.00	1.00	6.70	230.00	0.000	0.000	68.22	0.00	0.00
5	195.00	TD-RRH8x20-25	3	9.256	10.182	0.50	1.00	6.07	210.00	0.000	0.000	61.85	0.00	0.00
6	195.00	NNVV-65B-R4	3	9.256	10.182	0.73	1.00	26.87	232.20	0.000	0.000	273.59	0.00	0.00
7	195.00	1900MHz RRH (65MHz)	3	9.256	10.182	0.50	1.00	4.16	180.00	0.000	0.000	42.30	0.00	0.00
8	195.00	800 MHz RRH	6	9.256	10.182	0.50	1.00	7.47	318.00	0.000	0.000	76.06	0.00	0.00
9	195.00	APXVTM14-C-I20	3	9.256	10.182	0.78	1.00	14.84	168.60	0.000	0.000	151.05	0.00	0.00
10	185.00	(3) SitePro 1 PRK-SFS-L	1	9.118	10.030	0.80	0.80	5.36	230.00	0.000	0.000	53.76	0.00	0.00
11	185.00	Powerwave LGP21903	6	9.118	10.030	0.40	0.80	0.65	33.00	0.000	0.000	6.50	0.00	0.00
12	185.00	Sector Frames	1	9.118	10.030	1.00	1.00	22.00	1500.00	0.000	0.000	220.65	0.00	0.00
13	185.00	Cci DMP65R-BU8DA	6	9.118	10.030	0.58	0.80	62.62	576.00	0.000	0.000	628.02	0.00	0.00
14	185.00	Ericsson RRUS 4478 B14	3	9.118	10.030	0.40	0.80	2.21	179.70	0.000	0.000	22.15	0.00	0.00
15	185.00	(3) SitePro 1 SFS-L with	1	9.118	10.030	0.80	0.80	8.00	514.00	0.000	0.000	80.24	0.00	0.00
16	185.00	(3) SitePro 1 HRK14-3HD	1	9.118	10.030	0.80	0.80	7.80	406.61	0.000	0.000	78.23	0.00	0.00
17	185.00	Ericsson RRUS 8843 B2	3	9.118	10.030	0.40	0.80	1.97	216.00	0.000	0.000	19.74	0.00	0.00
18	185.00	Raycap DC6-48-60-18-8F	1	9.118	10.030	0.40	0.80	0.37	31.80	0.000	0.000	3.69	0.00	0.00
19	185.00	Powerwave LGP21401	6	9.118	10.030	0.40	0.80	3.10	84.60	0.000	0.000	31.05	0.00	0.00
20	185.00	Powerwave 7770	3	9.118	10.030	0.58	0.80	9.64	105.00	0.000	0.000	96.65	0.00	0.00
21	185.00	Raycap	1	9.118	10.030	0.40	0.80	1.91	16.00	0.000	0.000	19.18	0.00	0.00
22	185.00	Raycap DC6-48-60-18-8C	1	9.118	10.030	0.40	0.80	0.50	20.00	0.000	0.000	5.05	0.00	0.00
23	185.00	Ericsson 4449 B5/B12	3	9.118	10.030	0.40	0.80	2.36	213.00	0.000	0.000	23.71	0.00	0.00
24	175.00	Ericsson 4449 B71 + B85	3	8.974	9.872	0.54	0.80	3.17	213.00	0.000	0.000	31.27	0.00	0.00
25	175.00	RFS	3	8.974	9.872	0.50	0.80	9.61	122.10	0.000	0.000	94.89	0.00	0.00
26	175.00	RFS	3	8.974	9.872	0.56	0.80	34.00	368.40	0.000	0.000	335.67	0.00	0.00
27	175.00	Commscope	3	8.974	9.872	0.64	0.80	22.02	149.40	0.000	0.000	217.40	0.00	0.00
28	175.00	Platform w/ Hand Rail	1	8.974	9.872	1.00	1.00	32.00	1600.00	0.000	0.000	315.89	0.00	0.00
29	175.00	Ericsson RRUS11 B2	6	8.974	9.872	0.40	0.80	6.05	303.60	0.000	0.000	59.70	0.00	0.00
30	175.00	Ericsson RRUS11 B4	3	8.974	9.872	0.40	0.80	3.02	151.80	0.000	0.000	29.85	0.00	0.00
31	165.00	BSAMNT-SBS-1-2	3	8.825	9.707	0.56	0.75	0.00	76.80	0.000	0.000	0.00	0.00	0.00
32	165.00	RMQLP-4096-HK Plat. +	1	8.825	9.707	1.00	1.00	51.70	2810.05	0.000	0.000	501.86	0.00	0.00
33	165.00	Raycap	9	8.825	9.707	0.38	0.75	13.70	288.00	0.000	0.000	133.01	0.00	0.00
34	165.00	B5/B13 RRH-BR04C	12	8.825	9.707	0.38	0.75	8.42	843.60	0.000	0.000	81.69	0.00	0.00
35	165.00	B2/B66A RRH-BR049	12	8.825	9.707	0.38	0.75	8.42	1012.80	0.000	0.000	81.69	0.00	0.00
36	165.00	Samsung MT6407-77A	6	8.825	9.707	0.52	0.75	14.77	476.40	0.000	0.000	143.41	0.00	0.00
37	165.00	Commscope	15	8.825	9.707	0.62	0.75	75.45	654.75	0.000	0.000	732.37	0.00	0.00
							Totals:		**17,061.84**			**5,150.55**		

Total Applied Force Summary

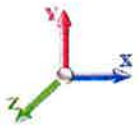
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 66	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		50.04	677.88	0.00	0.00
4.00		49.79	673.38	0.00	0.00
6.00		49.55	668.88	0.00	0.00
8.00		49.30	664.38	0.00	0.00
10.00		49.06	659.87	0.00	0.00
12.00		48.81	655.37	0.00	0.00
14.00		48.57	650.87	0.00	0.00
16.00		48.32	646.37	0.00	0.00
18.00		48.08	641.87	0.00	0.00
20.00		47.83	637.36	0.00	0.00
22.00		47.59	632.86	0.00	0.00
24.00		47.34	628.36	0.00	0.00
26.00		47.09	623.86	0.00	0.00
28.00		46.85	619.36	0.00	0.00
30.00		46.64	614.85	0.00	0.00
32.00		47.26	610.35	0.00	0.00
34.00		47.83	605.85	0.00	0.00
36.00		48.36	601.35	0.00	0.00
38.00		48.85	596.85	0.00	0.00
40.00		49.30	592.35	0.00	0.00
41.00		24.73	294.48	0.00	0.00
42.00		25.23	553.48	0.00	0.00
44.00		50.93	1100.21	0.00	0.00
46.00		51.30	1091.21	0.00	0.00
48.00		51.65	1082.20	0.00	0.00
50.00		51.65	578.10	0.00	0.00
52.00		51.95	573.60	0.00	0.00
54.00		52.22	569.10	0.00	0.00
56.00		47.55	564.60	0.00	0.00
58.00		46.08	560.10	0.00	0.00
60.00		46.10	555.60	0.00	0.00
62.00		46.10	551.09	0.00	0.00
64.00		46.08	546.59	0.00	0.00
66.00		46.05	542.09	0.00	0.00
68.00		46.00	537.59	0.00	0.00
70.00		45.94	533.09	0.00	0.00
72.00		45.86	528.58	0.00	0.00
74.00		45.76	524.08	0.00	0.00
76.00		45.66	519.58	0.00	0.00
78.00		45.54	515.08	0.00	0.00
80.00		45.40	510.58	0.00	0.00
82.00		45.26	506.07	0.00	0.00
84.00		45.10	501.57	0.00	0.00
85.00		22.45	249.10	0.00	0.00
86.00		22.84	462.71	0.00	0.00
88.00		45.62	918.67	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 67

Tower Engineering Solutions

90.00		45.44	909.66	0.00	0.00
91.00		22.61	451.45	0.00	0.00
92.00		22.56	245.35	0.00	0.00
93.00		22.51	244.23	0.00	0.00
94.00		22.45	213.97	0.00	0.00
96.00		44.81	425.04	0.00	0.00
98.00		44.59	421.18	0.00	0.00
100.00		44.35	417.32	0.00	0.00
102.00		44.10	413.46	0.00	0.00
104.00		43.85	409.60	0.00	0.00
106.00		43.58	405.74	0.00	0.00
108.00		43.31	401.89	0.00	0.00
110.00		43.03	398.03	0.00	0.00
112.00		42.74	394.17	0.00	0.00
114.00		42.44	390.31	0.00	0.00
116.00		42.31	386.45	0.00	0.00
118.00		42.15	382.59	0.00	0.00
120.00		41.99	378.73	0.00	0.00
122.00		41.82	374.87	0.00	0.00
124.00		41.65	371.02	0.00	0.00
125.00		20.73	184.06	0.00	0.00
126.00		20.69	159.02	0.00	0.00
128.00		41.29	315.63	0.00	0.00
130.00		41.10	312.41	0.00	0.00
132.00		41.63	547.87	0.00	0.00
134.00		41.44	541.44	0.00	0.00
135.00		20.62	268.31	0.00	0.00
136.00		20.45	153.09	0.00	0.00
138.00		40.78	303.77	0.00	0.00
140.00		40.57	300.55	0.00	0.00
142.00		40.35	253.15	0.00	0.00
144.00		37.85	250.58	0.00	0.00
146.00		37.45	248.01	0.00	0.00
148.00		37.04	245.44	0.00	0.00
150.00		36.63	242.86	0.00	0.00
152.00		36.21	240.29	0.00	0.00
154.00		35.78	237.72	0.00	0.00
156.00		35.35	235.15	0.00	0.00
158.00		34.92	232.57	0.00	0.00
160.00		34.48	230.00	0.00	0.00
162.00		34.03	227.43	0.00	0.00
164.00		33.58	224.86	0.00	0.00
165.00	(58) attachments	1690.62	6273.86	0.00	0.00
166.00		16.49	98.34	0.00	0.00
168.00		32.66	194.75	0.00	0.00
170.00		32.20	192.18	0.00	0.00
172.00		31.73	189.61	0.00	0.00
174.00		31.25	187.03	0.00	0.00
175.00	(22) attachments	1100.11	3000.85	0.00	0.00
176.00		15.31	88.76	0.00	0.00
178.00		30.29	175.58	0.00	0.00
180.00		61.52	173.01	0.00	0.00
182.00		60.50	185.97	0.00	0.00
184.00		24.03	185.97	0.00	0.00
185.00	(37) attachments	1300.65	4218.70	0.00	0.00
186.00		12.05	75.07	0.00	0.00
188.00		24.18	150.13	0.00	0.00

Total Applied Force Summary

Structure:	CT01916-S-SBA		**Code:**	TIA-222-H	4/4/2023
Site Name:	North Salem		**Exposure:**	B	
Height:	195.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 68

Tower Engineering Solutions

190.00		24.26	150.13	0.00	0.00
192.00		24.33	150.13	0.00	0.00
194.00		24.40	150.13	0.00	0.00
195.00	(22) attachments	1115.47	3940.50	0.00	0.00
	Totals:	**9,302.80**	**61,941.40**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

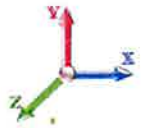
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 69	

TES Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.119	1.058	5.417	0.00	0.00
2.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.119	1.058	5.417	0.00	0.00
4.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.120	1.060	5.417	0.00	0.00
4.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.120	1.060	5.417	0.00	0.00
6.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.121	1.063	5.417	0.00	0.00
6.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.121	1.063	5.417	0.00	0.00
8.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.122	1.066	5.417	0.00	0.00
8.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.122	1.066	5.417	0.00	0.00
10.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.123	1.069	5.417	0.00	0.00
10.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.123	1.069	5.417	0.00	0.00
12.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.124	1.071	5.417	0.00	0.00
12.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.124	1.071	5.417	0.00	0.00
14.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.125	1.074	5.417	0.00	0.00
14.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.125	1.074	5.417	0.00	0.00
16.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.126	1.077	5.417	0.00	0.00
16.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.126	1.077	5.417	0.00	0.00
18.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.127	1.080	5.417	0.00	0.00
18.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.127	1.080	5.417	0.00	0.00
20.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.128	1.083	5.417	0.00	0.00
20.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.128	1.083	5.417	0.00	0.00
22.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.129	1.086	5.417	0.00	0.00
22.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.129	1.086	5.417	0.00	0.00
24.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.130	1.089	5.417	0.00	0.00
24.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.130	1.089	5.417	0.00	0.00
26.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.131	1.093	5.417	0.00	0.00
26.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.131	1.093	5.417	0.00	0.00
28.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.132	1.096	5.417	0.00	0.00
28.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.132	1.096	5.417	0.00	0.00
30.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.133	1.099	5.422	0.00	0.00
30.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.133	1.099	5.422	0.00	0.00
32.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.134	1.102	5.523	0.00	0.00
32.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.134	1.102	5.523	0.00	0.00
34.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.135	1.106	5.619	0.00	0.00
34.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.135	1.106	5.619	0.00	0.00
36.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.136	1.109	5.712	0.00	0.00
36.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.136	1.109	5.712	0.00	0.00
38.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.138	1.113	5.801	0.00	0.00
38.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.138	1.113	5.801	0.00	0.00
40.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.139	1.116	5.887	0.00	0.00
40.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.139	1.116	5.887	0.00	0.00
41.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.140	1.119	5.928	0.00	0.00
41.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.140	1.119	5.928	0.00	0.00
42.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.140	1.121	5.969	0.00	0.00
42.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.140	1.121	5.969	0.00	0.00
44.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.141	1.124	6.049	0.00	0.00
44.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.141	1.124	6.049	0.00	0.00
46.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.142	1.127	6.126	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 70	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
46.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.142	1.127	6.126	0.00	0.00
48.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.144	1.131	6.201	0.00	0.00
48.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.144	1.131	6.201	0.00	0.00
50.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.143	1.128	6.274	0.00	0.00
50.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.143	1.128	6.274	0.00	0.00
52.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.144	1.132	6.345	0.00	0.00
52.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.144	1.132	6.345	0.00	0.00
54.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.145	1.136	6.414	0.00	0.00
54.00	(4) C5x9	Yes	2.00	0.000	3.78	0.63	0.00	0.145	1.136	6.414	0.00	0.00
56.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.111	1.033	6.481	0.00	0.00
56.00	(4) C5x9	Yes	1.00	0.000	3.78	0.32	0.00	0.111	1.033	6.481	0.00	0.00
58.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.076	0.000	6.546	0.00	0.00
60.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.077	0.000	6.610	0.00	0.00
62.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.077	0.000	6.672	0.00	0.00
64.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.078	0.000	6.733	0.00	0.00
66.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.079	0.000	6.792	0.00	0.00
68.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.080	0.000	6.850	0.00	0.00
70.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.080	0.000	6.907	0.00	0.00
72.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.081	0.000	6.963	0.00	0.00
74.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.082	0.000	7.018	0.00	0.00
76.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.083	0.000	7.071	0.00	0.00
78.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.084	0.000	7.124	0.00	0.00
80.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.085	0.000	7.176	0.00	0.00
82.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.085	0.000	7.227	0.00	0.00
84.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.086	0.000	7.277	0.00	0.00
85.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.087	0.000	7.301	0.00	0.00
86.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.088	0.000	7.326	0.00	0.00
88.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.088	0.000	7.374	0.00	0.00
90.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.089	0.000	7.421	0.00	0.00
91.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.090	0.000	7.445	0.00	0.00
92.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.089	0.000	7.468	0.00	0.00
93.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.089	0.000	7.491	0.00	0.00
94.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.090	0.000	7.514	0.00	0.00
96.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.090	0.000	7.559	0.00	0.00
98.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.091	0.000	7.604	0.00	0.00
100.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.092	0.000	7.648	0.00	0.00
102.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.093	0.000	7.692	0.00	0.00
104.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.094	0.000	7.734	0.00	0.00
106.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.096	0.000	7.777	0.00	0.00
108.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.097	0.000	7.818	0.00	0.00
110.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.098	0.000	7.859	0.00	0.00
112.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.099	0.000	7.900	0.00	0.00
114.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.100	0.000	7.940	0.00	0.00
116.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.101	1.004	7.979	0.00	0.00
118.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.103	1.008	8.019	0.00	0.00
120.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.104	1.012	8.057	0.00	0.00
122.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.105	1.016	8.095	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

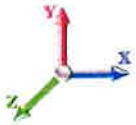
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 71	

TES Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
124.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.107	1.020	8.133	0.00	0.00
125.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.108	1.023	8.152	0.00	0.00
126.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.108	1.025	8.170	0.00	0.00
128.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.109	1.028	8.207	0.00	0.00
130.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.111	1.033	8.244	0.00	0.00
132.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.112	1.037	8.280	0.00	0.00
134.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.114	1.042	8.315	0.00	0.00
135.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.115	1.045	8.333	0.00	0.00
136.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.114	1.042	8.350	0.00	0.00
138.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.115	1.045	8.385	0.00	0.00
140.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.117	1.050	8.420	0.00	0.00
142.00	(4) C6x10.5	Yes	2.00	0.000	4.00	0.67	0.00	0.118	1.055	8.454	0.00	0.00
144.00	(4) C6x10.5	Yes	1.00	0.000	4.00	0.33	0.00	0.060	0.000	8.488	0.00	0.00
178.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.26	0.00	0.063	0.000	9.018	0.00	0.00
180.00	(3) Bypass Stiffeners	Yes	2.00	0.600	12.60	2.10	1.26	0.512	0.000	9.047	12.54	0.00
182.00	(3) Bypass Stiffeners	Yes	2.00	0.600	12.60	2.10	1.26	0.525	0.000	9.075	12.58	0.00
184.00	(3) Bypass Stiffeners	Yes	0.25	0.000	12.60	0.26	0.00	0.066	0.000	9.104	0.00	0.00
										Totals:	**25.1**	**0.0**

Calculated Forces

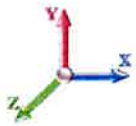
Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 72	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-61.94	-9.31	0.00	-1380.9	0.00	1380.90	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.191
2.00	-61.26	-9.28	0.00	-1362.2	0.00	1362.28	5777.89	1549.56	8174.96	7566.71	0.00	-0.017	0.000	0.191
4.00	-60.58	-9.25	0.00	-1343.7	0.00	1343.73	5752.42	1537.95	8052.92	7476.52	0.01	-0.034	0.000	0.190
6.00	-59.91	-9.21	0.00	-1325.2	0.00	1325.24	5726.67	1526.34	7931.81	7386.49	0.03	-0.051	0.000	0.190
8.00	-59.24	-9.18	0.00	-1306.8	0.00	1306.81	5700.65	1514.73	7811.61	7296.62	0.06	-0.069	0.000	0.190
10.00	-58.58	-9.15	0.00	-1288.4	0.00	1288.45	5674.37	1503.12	7692.32	7206.92	0.09	-0.086	0.000	0.189
12.00	-57.92	-9.12	0.00	-1270.1	0.00	1270.15	5647.82	1491.51	7573.96	7117.40	0.13	-0.104	0.000	0.189
14.00	-57.27	-9.09	0.00	-1251.9	0.00	1251.91	5620.99	1479.91	7456.51	7028.07	0.18	-0.122	0.000	0.188
16.00	-56.62	-9.05	0.00	-1233.7	0.00	1233.74	5593.90	1468.30	7339.98	6938.94	0.23	-0.140	0.000	0.188
18.00	-55.98	-9.02	0.00	-1215.6	0.00	1215.63	5566.54	1456.69	7224.37	6850.01	0.30	-0.158	0.000	0.188
20.00	-55.34	-8.99	0.00	-1197.5	0.00	1197.59	5538.91	1445.08	7109.68	6761.30	0.37	-0.176	0.000	0.187
22.00	-54.70	-8.96	0.00	-1179.6	0.00	1179.61	5511.02	1433.47	6995.90	6672.80	0.44	-0.195	0.000	0.187
24.00	-54.07	-8.93	0.00	-1161.6	0.00	1161.69	5482.85	1421.86	6883.05	6584.53	0.53	-0.213	0.000	0.186
26.00	-53.44	-8.89	0.00	-1143.8	0.00	1143.84	5454.41	1410.25	6771.11	6496.50	0.62	-0.232	0.000	0.186
28.00	-52.82	-8.86	0.00	-1126.0	0.00	1126.05	5425.71	1398.64	6660.08	6408.72	0.72	-0.251	0.000	0.185
30.00	-52.20	-8.83	0.00	-1108.3	0.00	1108.33	5396.74	1387.03	6549.98	6321.18	0.83	-0.270	0.000	0.185
32.00	-51.59	-8.80	0.00	-1090.6	0.00	1090.67	5367.49	1375.42	6440.79	6233.91	0.95	-0.290	0.000	0.185
34.00	-50.98	-8.76	0.00	-1073.0	0.00	1073.07	5337.98	1363.81	6332.52	6146.90	1.08	-0.309	0.000	0.184
36.00	-50.38	-8.73	0.00	-1055.5	0.00	1055.54	5308.20	1352.20	6225.17	6060.17	1.21	-0.329	0.000	0.184
38.00	-49.78	-8.70	0.00	-1038.0	0.00	1038.08	5278.15	1340.59	6118.74	5973.73	1.35	-0.349	0.000	0.183
40.00	-49.18	-8.66	0.00	-1020.6	0.00	1020.69	5247.84	1328.98	6013.22	5887.58	1.50	-0.369	0.000	0.183
41.00	-48.89	-8.64	0.00	-1012.0	0.00	1012.04	5232.58	1323.18	5960.81	5844.61	1.58	-0.379	0.000	0.183
42.00	-48.33	-8.62	0.00	-1003.4	0.00	1003.40	5217.25	1317.37	5908.62	5801.72	1.66	-0.389	0.000	0.182
44.00	-47.23	-8.58	0.00	-986.16	0.00	986.16	5186.39	1305.76	5804.94	5716.18	1.83	-0.410	0.000	0.182
46.00	-46.14	-8.54	0.00	-969.00	0.00	969.00	5155.27	1294.16	5702.18	5630.95	2.00	-0.430	0.000	0.181
48.00	-45.05	-8.49	0.00	-951.93	0.00	951.93	5181.33	1303.87	5788.10	5702.24	2.19	-0.451	0.000	0.176
50.00	-44.47	-8.45	0.00	-934.94	0.00	934.94	5150.16	1292.26	5685.49	5617.06	2.38	-0.472	0.000	0.175
52.00	-43.89	-8.41	0.00	-918.03	0.00	918.03	5118.73	1280.65	5583.79	5532.21	2.58	-0.492	0.000	0.175
54.00	-43.32	-8.37	0.00	-901.21	0.00	901.21	5087.02	1269.04	5483.02	5447.69	2.80	-0.512	0.000	0.174
56.00	-42.75	-8.33	0.00	-884.47	0.00	884.47	5055.04	1257.43	5383.16	5363.51	3.01	-0.533	0.000	0.173
58.00	-42.19	-8.30	0.00	-867.81	0.00	867.81	5022.80	1245.82	5284.21	5279.69	3.24	-0.554	0.000	0.173
60.00	-41.63	-8.26	0.00	-851.21	0.00	851.21	4990.29	1234.21	5186.19	5196.21	3.48	-0.574	0.000	0.172
62.00	-41.08	-8.22	0.00	-834.69	0.00	834.69	4957.51	1222.60	5089.08	5113.11	3.72	-0.595	0.000	0.172
64.00	-40.53	-8.19	0.00	-818.25	0.00	818.25	4924.46	1210.99	4992.89	5030.38	3.98	-0.617	0.000	0.171
66.00	-39.99	-8.15	0.00	-801.87	0.00	801.87	4891.14	1199.39	4897.62	4948.02	4.24	-0.638	0.000	0.170
68.00	-39.45	-8.11	0.00	-785.57	0.00	785.57	4857.55	1187.78	4803.27	4866.06	4.51	-0.660	0.000	0.170
70.00	-38.91	-8.08	0.00	-769.35	0.00	769.35	4823.69	1176.17	4709.83	4784.49	4.79	-0.682	0.000	0.169
72.00	-38.38	-8.04	0.00	-753.20	0.00	753.20	4789.56	1164.56	4617.32	4703.33	5.08	-0.703	0.000	0.168
74.00	-37.85	-8.00	0.00	-737.12	0.00	737.12	4755.17	1152.95	4525.72	4622.58	5.38	-0.726	0.000	0.167
76.00	-37.33	-7.96	0.00	-721.12	0.00	721.12	4720.51	1141.34	4435.03	4542.26	5.69	-0.748	0.000	0.167
78.00	-36.81	-7.92	0.00	-705.20	0.00	705.20	4685.57	1129.73	4345.27	4462.36	6.01	-0.770	0.000	0.166
80.00	-36.30	-7.89	0.00	-689.35	0.00	689.35	4650.37	1118.12	4256.42	4382.90	6.34	-0.793	0.000	0.165
82.00	-35.79	-7.85	0.00	-673.57	0.00	673.57	4614.90	1106.51	4168.49	4303.88	6.68	-0.816	0.000	0.164
84.00	-35.29	-7.81	0.00	-657.88	0.00	657.88	4579.16	1094.90	4081.48	4225.32	7.02	-0.839	0.000	0.163
85.00	-35.04	-7.79	0.00	-650.07	0.00	650.07	4561.19	1089.10	4038.32	4186.21	7.20	-0.851	0.000	0.163
86.00	-34.57	-7.77	0.00	-642.28	0.00	642.28	4543.15	1083.29	3995.39	4147.21	7.38	-0.863	0.000	0.163
88.00	-33.65	-7.72	0.00	-626.74	0.00	626.74	4506.88	1071.68	3910.21	4069.58	7.75	-0.886	0.000	0.162
90.00	-32.74	-7.67	0.00	-611.30	0.00	611.30	4470.33	1060.07	3825.95	3992.42	8.12	-0.910	0.000	0.160

Calculated Forces

Structure: CT01916-S-SBA
Site Name: North Salem
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/4/2023

TES Tower Engineering Solutions

91.00	-32.29	-7.65	0.00	-603.62	0.00	603.62	4519.12	1075.59	3938.79	4095.67	8.31	-0.922	0.000	0.155
92.00	-32.04	-7.63	0.00	-595.97	0.00	595.97	4500.93	1069.79	3896.39	4056.95	8.51	-0.934	0.000	0.154
93.00	-31.80	-7.61	0.00	-588.34	0.00	588.34	4482.67	1063.98	3854.22	4018.35	8.71	-0.945	0.000	0.154
93.00	-31.80	-7.61	0.00	-588.34	0.00	588.34	3684.61	913.29	3313.08	3312.42	8.71	-0.945	0.000	0.186
94.00	-31.58	-7.60	0.00	-580.73	0.00	580.73	3670.68	908.31	3277.08	3281.76	8.90	-0.956	0.000	0.186
96.00	-31.15	-7.56	0.00	-565.54	0.00	565.54	3642.60	898.36	3205.67	3220.68	9.31	-0.983	0.000	0.184
98.00	-30.73	-7.52	0.00	-550.43	0.00	550.43	3614.26	888.41	3135.05	3159.91	9.73	-1.009	0.000	0.183
100.00	-30.31	-7.48	0.00	-535.39	0.00	535.39	3585.64	878.46	3065.22	3099.48	10.16	-1.036	0.000	0.181
102.00	-29.89	-7.44	0.00	-520.42	0.00	520.42	3556.76	868.51	2996.17	3039.38	10.60	-1.063	0.000	0.180
104.00	-29.48	-7.41	0.00	-505.53	0.00	505.53	3527.61	858.56	2927.90	2979.62	11.05	-1.090	0.000	0.178
106.00	-29.07	-7.37	0.00	-490.72	0.00	490.72	3498.19	848.61	2860.43	2920.21	11.51	-1.117	0.000	0.176
108.00	-28.67	-7.33	0.00	-475.98	0.00	475.98	3468.50	838.66	2793.74	2861.17	11.98	-1.144	0.000	0.175
110.00	-28.27	-7.29	0.00	-461.32	0.00	461.32	3438.54	828.71	2727.83	2802.49	12.47	-1.172	0.000	0.173
112.00	-27.87	-7.26	0.00	-446.73	0.00	446.73	3408.31	818.76	2662.72	2744.18	12.97	-1.199	0.000	0.171
114.00	-27.48	-7.22	0.00	-432.21	0.00	432.21	3377.82	808.81	2598.39	2686.26	13.47	-1.227	0.000	0.169
116.00	-27.09	-7.18	0.00	-417.78	0.00	417.78	3347.05	798.86	2534.84	2628.73	13.99	-1.254	0.000	0.167
118.00	-26.70	-7.14	0.00	-403.41	0.00	403.41	3316.02	788.90	2472.09	2571.60	14.53	-1.282	0.000	0.165
120.00	-26.32	-7.11	0.00	-389.12	0.00	389.12	3284.72	778.95	2410.12	2514.88	15.07	-1.310	0.000	0.163
122.00	-25.95	-7.07	0.00	-374.91	0.00	374.91	3253.15	769.00	2348.93	2458.58	15.62	-1.338	0.000	0.161
124.00	-25.57	-7.03	0.00	-360.77	0.00	360.77	3213.32	759.05	2288.53	2396.73	16.19	-1.366	0.000	0.159
125.00	-25.39	-7.01	0.00	-353.74	0.00	353.74	3192.26	754.08	2258.63	2365.26	16.48	-1.380	0.000	0.158
125.00	-25.39	-7.01	0.00	-353.74	0.00	353.74	2545.46	629.48	1888.72	1892.56	16.48	-1.380	0.000	0.197
126.00	-25.23	-7.00	0.00	-346.74	0.00	346.74	2533.76	625.34	1863.92	1871.35	16.77	-1.394	0.000	0.195
128.00	-24.91	-6.96	0.00	-332.75	0.00	332.75	2510.17	617.05	1814.81	1829.12	17.36	-1.427	0.000	0.192
130.00	-24.59	-6.93	0.00	-318.82	0.00	318.82	2486.30	608.75	1766.36	1787.17	17.96	-1.460	0.000	0.188
132.00	-24.04	-6.88	0.00	-304.97	0.00	304.97	2462.17	600.46	1718.57	1745.51	18.58	-1.494	0.000	0.185
134.00	-23.50	-6.84	0.00	-291.21	0.00	291.21	2437.77	592.17	1671.43	1704.13	19.22	-1.527	0.000	0.181
135.00	-23.23	-6.82	0.00	-284.37	0.00	284.37	2457.60	598.90	1709.65	1737.70	19.54	-1.543	0.000	0.173
136.00	-23.07	-6.80	0.00	-277.55	0.00	277.55	2445.41	594.76	1686.06	1717.00	19.86	-1.560	0.000	0.171
138.00	-22.77	-6.77	0.00	-263.95	0.00	263.95	2420.82	586.46	1639.37	1675.83	20.52	-1.590	0.000	0.167
140.00	-22.47	-6.73	0.00	-250.41	0.00	250.41	2395.97	578.17	1593.34	1634.95	21.20	-1.621	0.000	0.163
140.00	-22.47	-6.73	0.00	-250.41	0.00	250.41	1788.19	463.41	1279.47	1224.81	21.20	-1.621	0.000	0.217
142.00	-22.21	-6.69	0.00	-236.96	0.00	236.96	1771.85	456.77	1243.10	1196.12	21.88	-1.651	0.000	0.211
144.00	-21.96	-6.66	0.00	-223.57	0.00	223.57	1755.23	450.14	1207.26	1167.57	22.58	-1.688	0.000	0.204
146.00	-21.71	-6.63	0.00	-210.24	0.00	210.24	1738.36	443.51	1171.94	1139.16	23.30	-1.725	0.000	0.197
148.00	-21.46	-6.60	0.00	-196.98	0.00	196.98	1721.21	436.87	1137.14	1110.92	24.03	-1.760	0.000	0.190
150.00	-21.21	-6.57	0.00	-183.78	0.00	183.78	1703.79	430.24	1102.87	1082.85	24.77	-1.795	0.000	0.182
152.00	-20.97	-6.54	0.00	-170.64	0.00	170.64	1686.10	423.60	1069.12	1054.96	25.53	-1.830	0.000	0.174
154.00	-20.73	-6.51	0.00	-157.57	0.00	157.57	1668.15	416.97	1035.89	1027.24	26.31	-1.863	0.000	0.166
156.00	-20.49	-6.47	0.00	-144.55	0.00	144.55	1649.92	410.34	1003.19	999.72	27.09	-1.895	0.000	0.157
158.00	-20.26	-6.44	0.00	-131.60	0.00	131.60	1631.43	403.70	971.02	972.40	27.89	-1.925	0.000	0.148
160.00	-20.02	-6.41	0.00	-118.72	0.00	118.72	1612.67	397.07	939.37	945.29	28.71	-1.954	0.000	0.138
162.00	-19.80	-6.38	0.00	-105.90	0.00	105.90	1593.64	390.43	908.24	918.39	29.53	-1.982	0.000	0.128
164.00	-19.57	-6.34	0.00	-93.14	0.00	93.14	1574.34	383.80	877.64	891.72	30.37	-2.008	0.000	0.117
165.00	-13.36	-4.44	0.00	-86.80	0.00	86.80	1564.59	380.48	862.54	878.47	30.79	-2.020	0.000	0.107
166.00	-13.26	-4.42	0.00	-82.37	0.00	82.37	1554.77	377.17	847.56	865.27	31.21	-2.031	0.000	0.104
168.00	-13.06	-4.38	0.00	-73.53	0.00	73.53	1534.93	370.53	818.01	839.07	32.07	-2.054	0.000	0.096
170.00	-12.87	-4.35	0.00	-64.76	0.00	64.76	1514.83	363.90	788.98	813.12	32.93	-2.075	0.000	0.088
172.00	-12.68	-4.32	0.00	-56.06	0.00	56.06	1494.45	357.26	760.48	787.42	33.81	-2.094	0.000	0.080
174.00	-12.50	-4.28	0.00	-47.43	0.00	47.43	1473.81	350.63	732.50	761.98	34.69	-2.111	0.000	0.071
175.00	-9.54	-3.07	0.00	-43.14	0.00	43.14	1463.38	347.31	718.70	749.37	35.13	-2.119	0.000	0.064
176.00	-9.45	-3.06	0.00	-40.07	0.00	40.07	1452.89	344.00	705.04	736.82	35.58	-2.127	0.000	0.061
178.00	-9.27	-3.02	0.00	-33.96	0.00	33.96	1428.17	337.36	678.11	710.17	36.47	-2.141	0.000	0.054
180.00	-9.10	-2.95	0.00	-27.92	0.00	27.92	1400.09	330.73	651.70	682.38	37.37	-2.153	0.000	0.048
180.00	-9.10	-2.95	0.00	-27.92	0.00	27.92	678.42	203.53	25205.7	396.30	37.37	-2.153	0.000	0.084
182.00	-8.92	-2.89	0.00	-22.01	0.00	22.01	678.42	203.53	25205.7	396.30	38.27	-2.164	0.000	0.069
184.00	-8.73	-2.86	0.00	-16.24	0.00	16.24	678.42	203.53	25205.7	396.30	39.18	-2.171	0.000	0.054

Calculated Forces

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H
Site Name:	North Salem	**Exposure:**	B
Height:	195.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

4/4/2023

Tower Engineering Solutions

185.00	-4.57	-1.40	0.00	-13.38	0.00	13.38	678.42	203.53	25205.7	396.30	39.64	-2.174	0.000	0.041
186.00	-4.49	-1.38	0.00	-11.98	0.00	11.98	678.42	203.53	25205.7	396.30	40.09	-2.176	0.000	0.037
188.00	-4.34	-1.35	0.00	-9.21	0.00	9.21	678.42	203.53	25205.7	396.30	41.00	-2.180	0.000	0.030
190.00	-4.19	-1.32	0.00	-6.50	0.00	6.50	678.42	203.53	25205.7	396.30	41.92	-2.184	0.000	0.023
192.00	-4.04	-1.29	0.00	-3.85	0.00	3.85	678.42	203.53	25205.7	396.30	42.83	-2.186	0.000	0.016
194.00	-3.90	-1.26	0.00	-1.26	0.00	1.26	678.42	203.53	25205.7	396.30	43.75	-2.187	0.000	0.009
195.00	0.00	-1.12	0.00	0.00	0.00	0.00	678.42	203.53	25205.7	396.30	44.21	-2.187	0.000	0.000

Structure:	CT01916-S-SBA	**Code:**	TIA-222-H	4/4/2023	
Site Name:	North Salem	**Exposure:**	B		
Height:	195.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 75	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.0W 123 mph Wind	43.7	0.00	74.30	0.00	0.00	6548.57
0.9D + 1.0W 123 mph Wind	43.7	0.00	55.72	0.00	0.00	6419.18
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.7	0.00	101.57	0.00	0.00	1624.02
1.2D + 1.0Ev + 1.0Eh	0.8	0.00	77.11	0.00	0.00	151.50
0.9D + 1.0Ev + 1.0Eh	0.8	0.00	58.44	0.00	0.00	148.46
1.0D + 1.0W 60 mph Wind	9.3	0.00	61.94	0.00	0.00	1380.90

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.0W 123 mph Wind	-23.06	-32.00	0.00	-1189.8	0.00	-1189.8	2395.97	578.17	1593.34	1634.95	140.00	0.989
0.9D + 1.0W 123 mph Wind	-16.45	-31.02	0.00	-1149.2	0.00	-1149.2	2395.97	578.17	1593.34	1634.95	140.00	0.952
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-44.72	-7.97	0.00	-300.56	0.00	-300.56	2395.97	578.17	1593.34	1634.95	140.00	0.271
1.2D + 1.0Ev + 1.0Eh	-28.18	-0.86	0.00	-32.95	0.00	-32.95	2395.97	578.17	1593.34	1634.95	140.00	0.043
0.9D + 1.0Ev + 1.0Eh	-21.37	-0.84	0.00	-32.00	0.00	-32.00	2395.97	578.17	1593.34	1634.95	140.00	0.038
1.0D + 1.0W 60 mph Wind	-22.47	-6.73	0.00	-250.41	0.00	-250.41	2395.97	578.17	1593.34	1634.95	140.00	0.217

Monopole Mat Foundation Design

				Date
				4/4/2023
Customer Name:	Verizon		TIA Standard:	TIA-222-H
Site Name:			Structure Height (Ft.):	195
Site Number:	CT01916-S-SBA		Engineer Name:	J. Tibbetts
Engr. Number:	139809		Engineer Login ID:	

Foundation Info Obtained from:	Drawings/Calculations
Structure Type:	Monopole
Analysis or Design?	Analysis

Base Reactions (Factored):

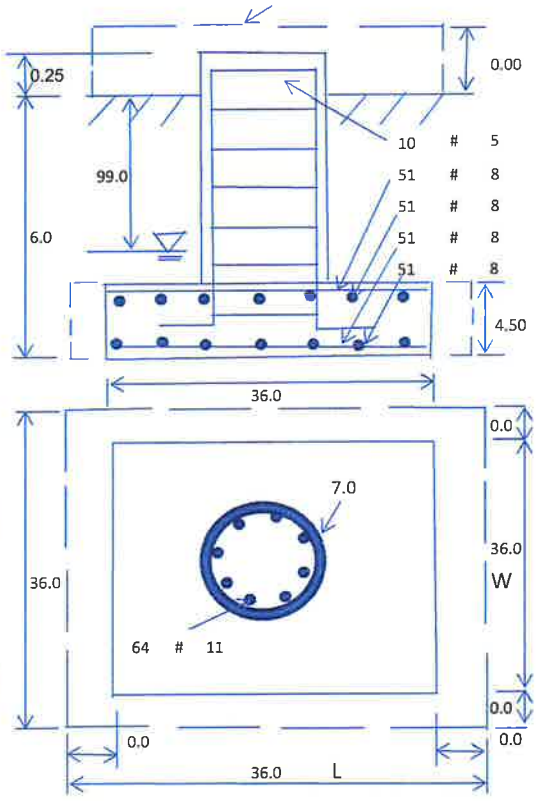
Axial Load (Kips):	74.3	Shear Force (Kips):	43.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6548.6

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.25	Thickness of Pad (ft):	4.50
Length of Pad (ft.):	36	Width of Pad (ft.):	36
Final Length of pad (ft)	36.0	Final width of pad (ft):	36.0

Material Properties and Reabr Info:

Concrete Strength (psi):	3500	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	64	Tie Spacing (in):	8.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	51	Qty. of Rebar in Pad (W):	51	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	51	Qty. of Rebar in Pad (W):	51	



Soil Design Parameters:

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:	425	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	1886.27	Total Dry Soil Weight (Kips):	188.63
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	188.63	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	5899.35	Total Dry Concrete Weight (Kips):	884.90
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	884.90	Total Vertical Load on Base (Kips):	1147.83

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1821	<	Allowable Factored Soil Bearing (psf): 22500	0.08	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	18728.6	>	Design Factored Momont (kips-ft): 6822	0.36	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.75	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00			
					Load/ Capacity Ratio		
(1) Concrete Pier:							
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31			
Calculated Moment Capacity (Mn,Kips-Ft):	15779.9	>	Design Factored Moment (Mu, Kips-F	6625.1	0.42	OK!	
Calculated Shear Capacity (Kips):	804.3	>	Design Factored Shear (Kips):	43.7	0.05	OK!	
Calculated Tension Capacity (Tn, Kips):	5391.4	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!	
Calculated Compression Capacity (Pn, Kips):	8418.7	>	Design Factored Axial Load (Pu Kips):	74.3	0.01	OK!	
Moment & Axial Strength Combination:	0.42	OK!	Check Tie Spacing (Design/Required):		0.6667	OK!	
Pier Reinforcement Ratio:	0.018		Reinforcement Ratio is satisfied per ACI				
(2).Concrete Pad:							
One-Way Design Shear Capacity (L-Direction, Kips):	1936.0	>	One-Way Factored Shear (L-D. Kips):	413.2	0.21	OK!	
One-Way Design Shear Capacity (W-Direction, Kips):	1936.0	>	One-Way Factored Shear (W-D., Kips)	413.2	0.21	OK!	
One-Way Design Shear Capacity (Corner-Corner. Kips):	1908.8	>	One-Way Factored Shear (C-C, Kips):	394.5	0.21	OK!	
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0018			
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	8985.4	>	Moment at Bottom (L-Dir. K-Ft):	3692.5	0.41	OK!	
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	8985.4	>	Moment at Bottom (W-Dir. K-Ft):	3692.5	0.41	OK!	
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	12668.8	>	Moment at Bottom (C-C Dir. K-Ft):	5222.0	0.41	OK!	
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0018			
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	8985.4	>	Moment at the top (L-Dir K-Ft):	1364.7	0.15	OK!	
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	8985.4	>	Moment at the top (W-Dir K-Ft):	1364.7	0.15	OK!	
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	12668.8	>	Moment at the top (C-C Dir. K-Ft):	1272.2	0.10	OK!	
(3).Check Punching Shear Capacity due to Moment in the Pier:							
Moment transferred by punching shear:	2619.4	k-ft.	Max. factored shear stress v_{u_CD}:		5.6	Psi	
Max. factored shear stress v_{u_AB}:	10.7	Psi	Factored shear Strength ϕv_n:		177.5	Psi	
Max. factored shear stress v_u:	10.7	Psi	Check Usage of Punching Shear Capacity:		0.06	OK!	
(4).Check Bending Capacity of the Pad Within the Effective Slab Width:							
Overturning moment to be transferred by flexure:	1964.6	k-ft.	Effective Width for resisting OT moment:		20.5	ft.	
Calculated number of Rebar in Effective width:	30		Actual number of Rebar in Effective width:		30		
Steel Pad Moment Capacity (L-Direc. Kips-ft):	5282.2	k-ft.	Check Usage of the Flexure Capacity:		0.37	OK!	

TES
Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Antenna Mount Analysis Report and PMI Requirements

Existing 195-Ft Monopole Tower
SBA Communications Corp
Location Code: CT01916-S-SBA
Site Name: North Salem
Verizon

Site Location: 160 Witch Meadow Road
Salem, Connecticut
New London County
Latitude: 41.502828
Longitude: -72.297052

3/28/2023

Analysis Result:

Max Structural Usage: 51.8% [Pass]

Report Prepared By: Progesh Roka

NOTE: The proposed [(1) Site Pro1 RMQLP-4096-HK] mount was not currently installed on the tower. The proposed mount was assumed to be installed per the manufacturer's instructions, and it was assumed that it can be installed properly on the tower. TES cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the [(1) Site Pro1 RMQLP-4096-HK] at 165.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info provided by SBA; Application #: 217919, v8; dated 3/23/2023 [(1) SitePro1 RMQLP-4096-HK]; Structural Details provided by Site Pro
Antenna Loading	Provided by SBA; Application #: 217919, v8; dated 3/23/2023
Modification Drawings	N/A

Analysis Criteria

Wind Speed Used in the Analysis: V_{ULT} = 125 mph (3-Sec. Gust) mph (3-Sec. Gust)
Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-H/2021 IBC/2022 Connecticut State Building Code
Exposure Category: B
Risk Category: II
Topographic Category: 1
Crest Height (Ft): 0
Ground Elevation Factor: 0.988

Mount Information

[(1) Site Pro1 RMQLP-4096-HK] at 165.00' elevation

Final Antenna Configuration

Quantity	Manufacturer	Model	Status
15	Commscope	NHH-65B-R2B	Added
6	Samsung	MT6407-77A	Added
3	Commscope	BSAMNT-SBS-1-2**	Added
12	Samsung	B2/B66A RRH ORAN (RF4439d-25A)	Added
12	Samsung	B5/B13 RRH ORAN (RF4440d-13A)	Added
9	Raycap	RVZDC-6627-PF-48*	Added

* Added equipment to be mounted on the standoff member using separate pipe. They are not shown in the placement diagram but are included in this mount analysis.

** Proposed dual brackets used to mount dual antennas on the same mount pipe. They are not shown in the placement diagram but are included in this mount analysis.

In addition to the proposed equipment loading, a 500 lb serviceability load was also considered in this analysis in accordance with TIA requirements.

Analysis Results

Our calculations have determined that under design wind load the proposed mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 51.8%, which occurs in the support rail pipe. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

NOTE: The proposed [(1) Site Pro1 RMQLP-4096-HK] mount was not currently installed on the tower. The proposed mount was assumed to be installed per the manufacturer's instructions, and it was assumed that it can be installed properly on the tower. TES cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

Attachments

1. Mount Drawing
2. Analysis Calculations
3. Miscellaneous Calculations
4. **Contractor Required PMI Report Deliverables**
5. Antenna Placement Diagrams

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.

2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.

4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.

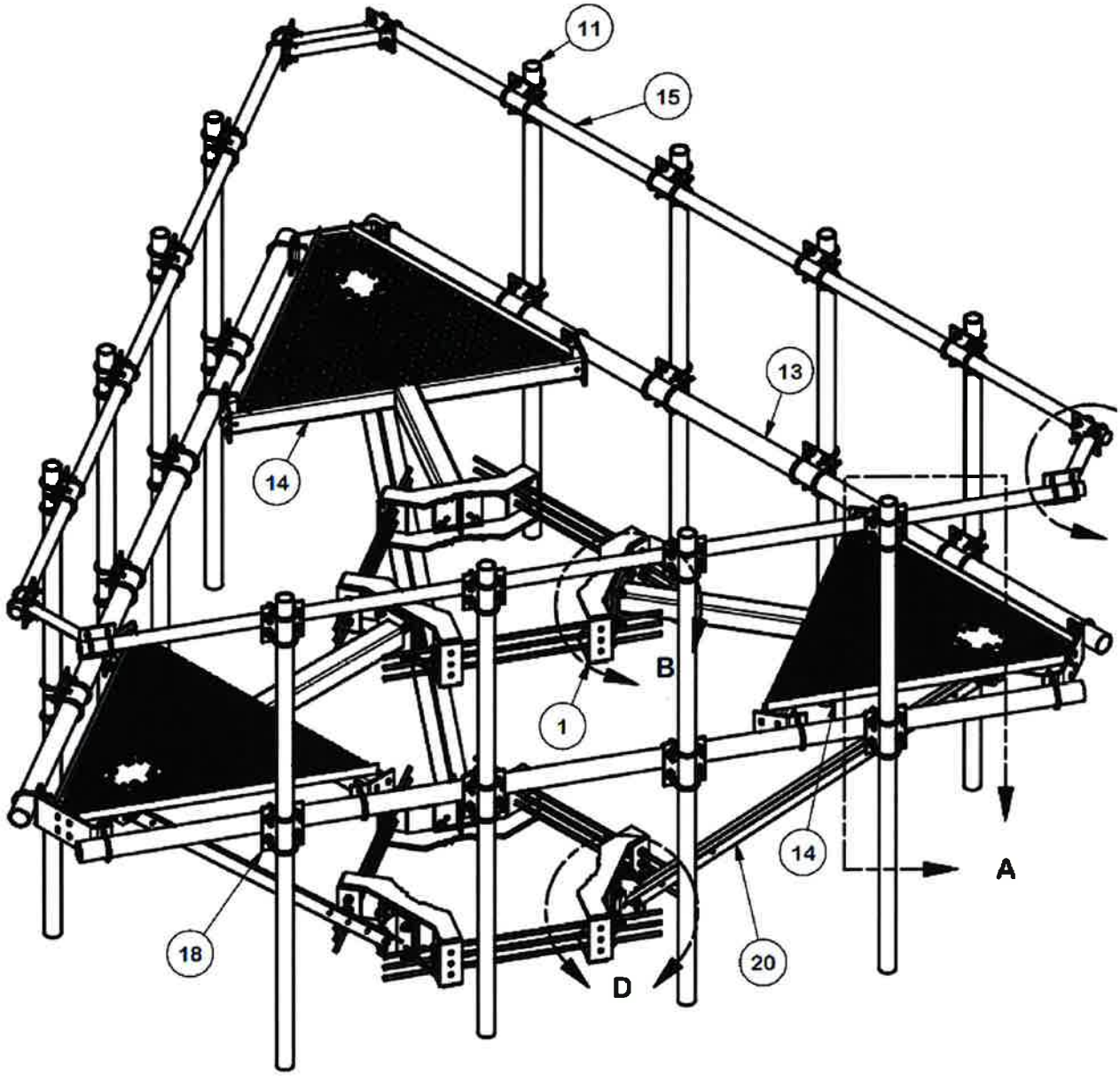
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.

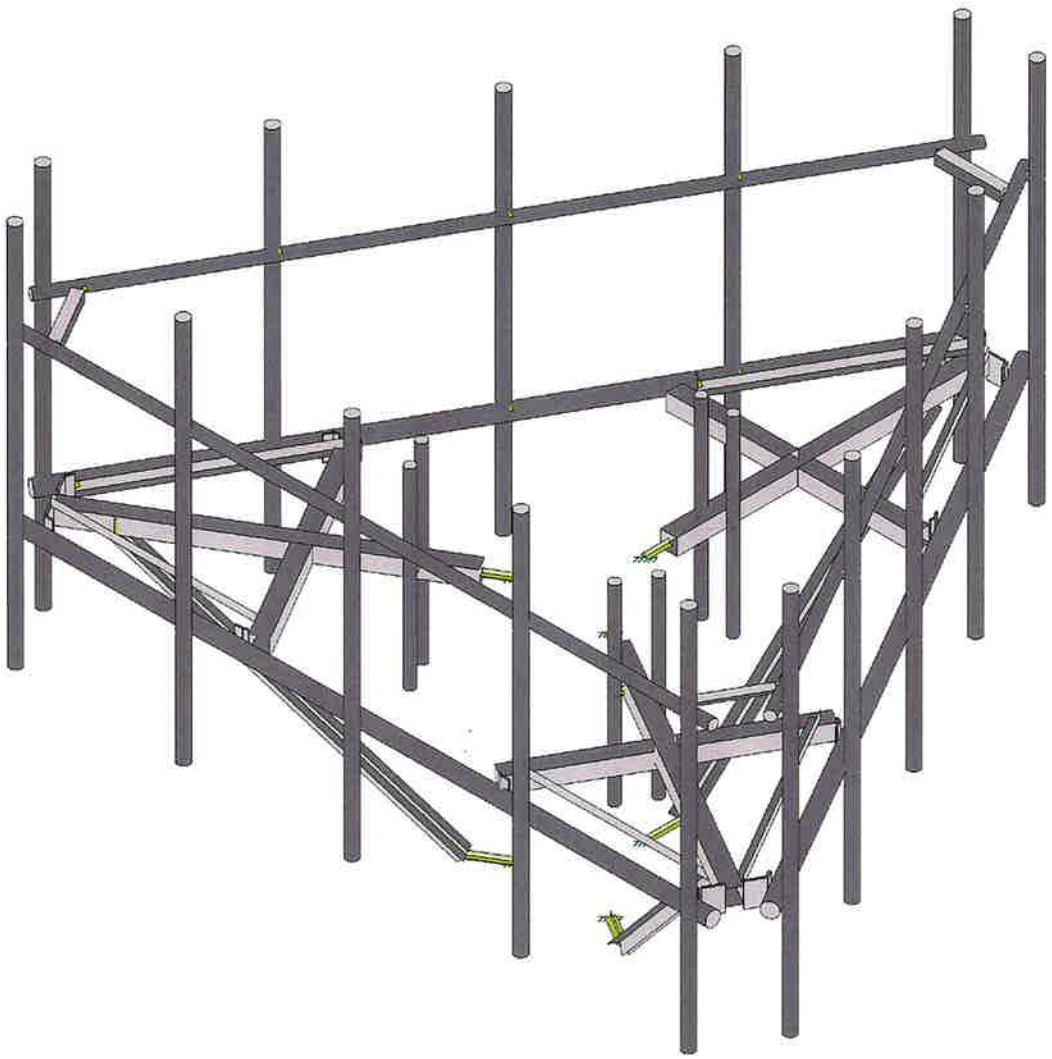
7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.

8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.

9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



Site Pro1 RMQLP-4096-HK



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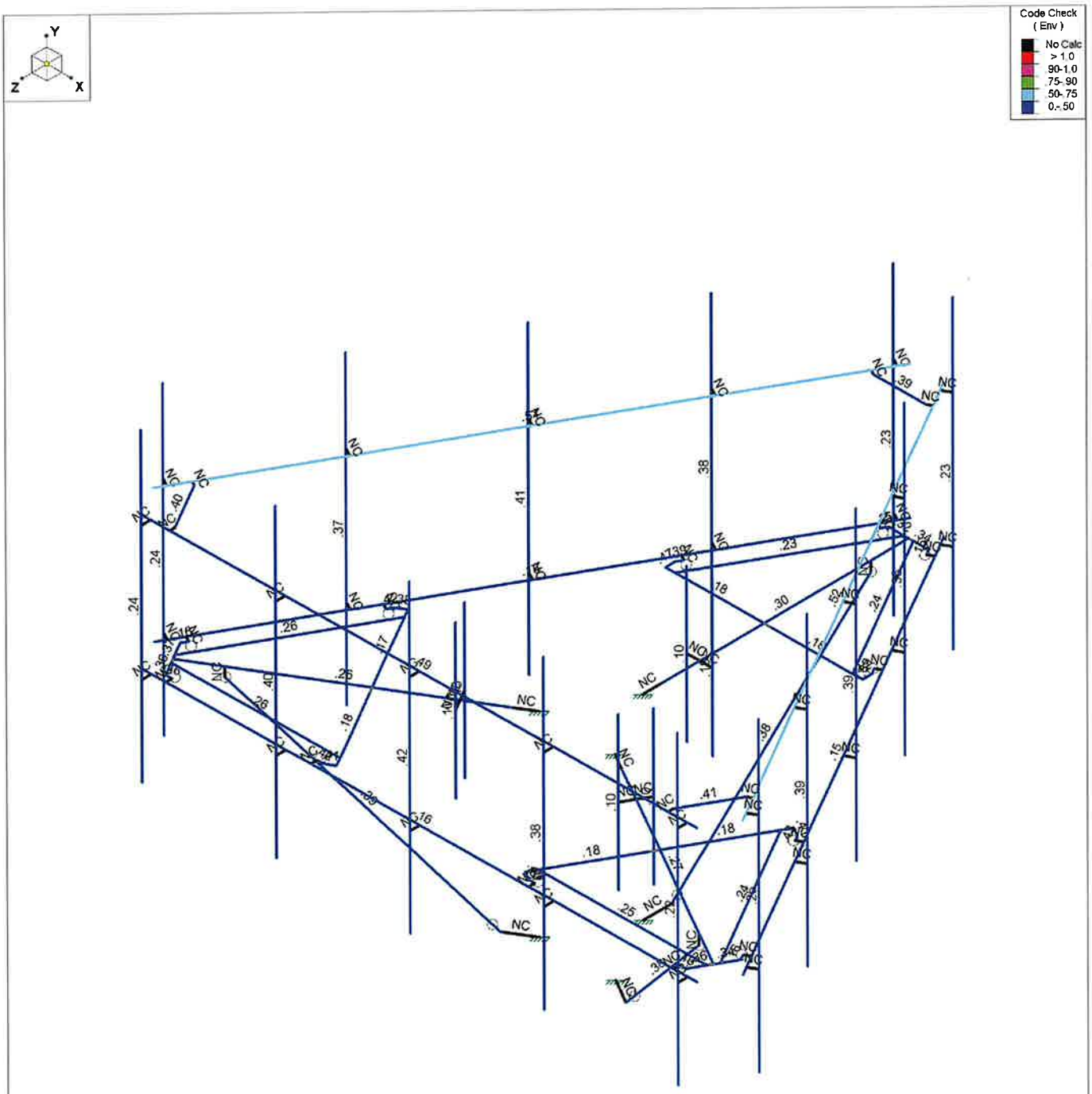
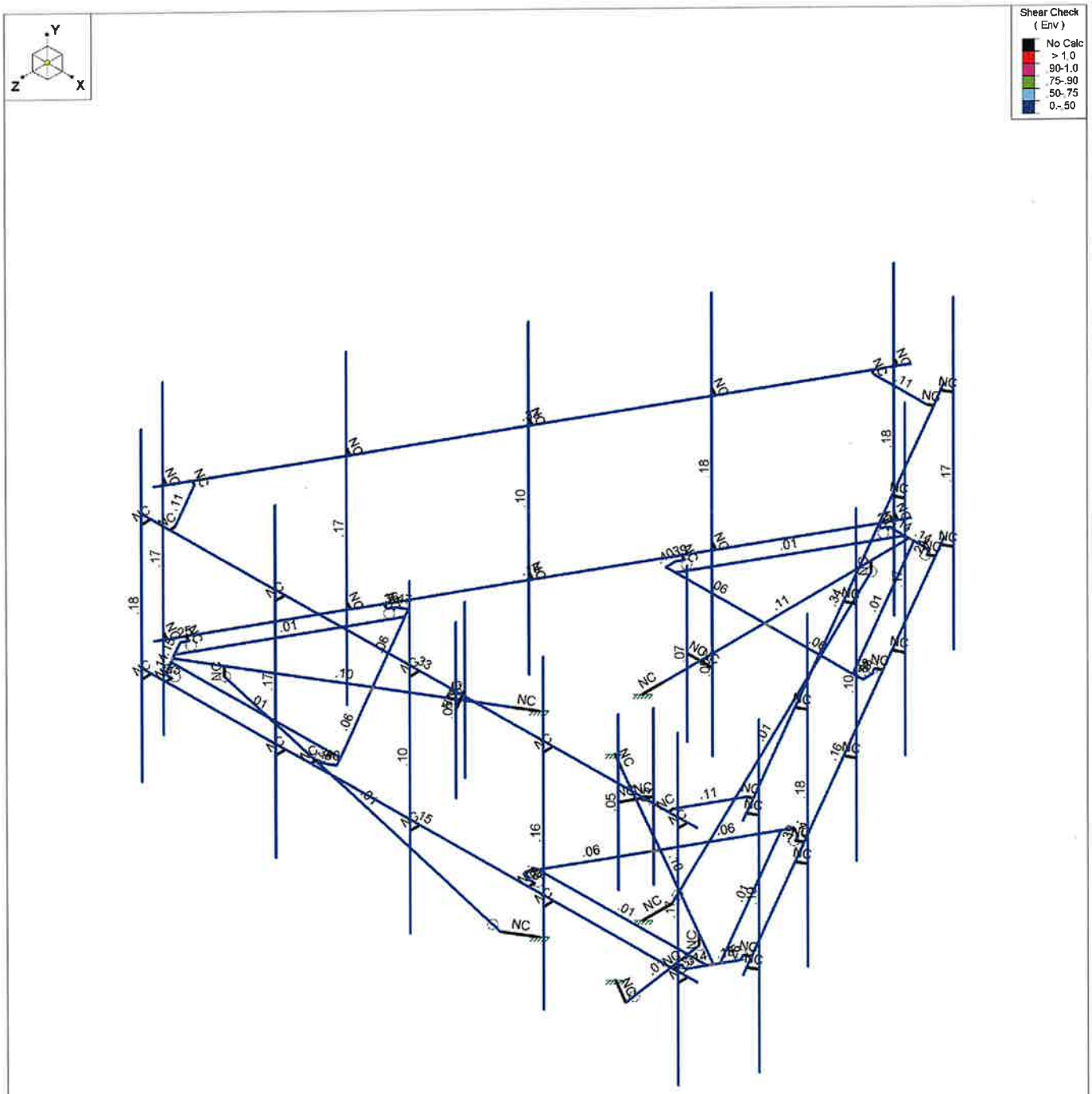
Progesh Roka		Mar 24, 2023 at 3:53 PM
TES Project No. 139516		CT01916-S-SBA_139516_H_RISA_...



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)

Tower Engineering Solutio...	CT01916-S-SBA_MT_LO_Loads Only_H	SK - 2
Progesh Roka	UNITY	Mar 24, 2023 at 3:53 PM
TES Project No. 139516		CT01916-S-SBA_139516_H_RISA_...



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)

Tower Engineering Solutio...	CT01916-S-SBA_MT_LO_Loads Only_H	SK - 3
Progesh Roka	SHEAR	Mar 24, 2023 at 3:53 PM
TES Project No. 139516		CT01916-S-SBA_139516_H_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					222			
2	Antenna Di	None					222			
3	Antenna Wo (0 Deg)	None					222			
4	Antenna Wo (30 Deg)	None					222			
5	Antenna Wo (60 Deg)	None					222			
6	Antenna Wo (90 Deg)	None					222			
7	Antenna Wo (120 Deg)	None					222			
8	Antenna Wo (150 Deg)	None					222			
9	Antenna Wo (180 Deg)	None					222			
10	Antenna Wo (210 Deg)	None					222			
11	Antenna Wo (240 Deg)	None					222			
12	Antenna Wo (270 Deg)	None					222			
13	Antenna Wo (300 Deg)	None					222			
14	Antenna Wo (330 Deg)	None					222			
15	Antenna Wi (0 Deg)	None					222			
16	Antenna Wi (30 Deg)	None					222			
17	Antenna Wi (60 Deg)	None					222			
18	Antenna Wi (90 Deg)	None					222			
19	Antenna Wi (120 Deg)	None					222			
20	Antenna Wi (150 Deg)	None					222			
21	Antenna Wi (180 Deg)	None					222			
22	Antenna Wi (210 Deg)	None					222			
23	Antenna Wi (240 Deg)	None					222			
24	Antenna Wi (270 Deg)	None					222			
25	Antenna Wi (300 Deg)	None					222			
26	Antenna Wi (330 Deg)	None					222			
27	Antenna Wm (0 Deg)	None					222			
28	Antenna Wm (30 Deg)	None					222			
29	Antenna Wm (60 Deg)	None					222			
30	Antenna Wm (90 Deg)	None					222			
31	Antenna Wm (120 De...	None					222			
32	Antenna Wm (150 De...	None					222			
33	Antenna Wm (180 De...	None					222			
34	Antenna Wm (210 De...	None					222			
35	Antenna Wm (240 De...	None					222			
36	Antenna Wm (270 De...	None					222			
37	Antenna Wm (300 De...	None					222			
38	Antenna Wm (330 De...	None					222			
39	Structure D	None		-1					3	
40	Structure Di	None						72	3	
41	Structure Wo (0 Deg)	None						144		
42	Structure Wo (30 Deg)	None						144		
43	Structure Wo (60 Deg)	None						144		
44	Structure Wo (90 Deg)	None						144		
45	Structure Wo (120 De...	None						144		
46	Structure Wo (150 De...	None						144		
47	Structure Wo (180 De...	None						144		
48	Structure Wo (210 De...	None						144		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
49	Structure Wo (240 De...	None						144		
50	Structure Wo (270 De...	None						144		
51	Structure Wo (300 De...	None						144		
52	Structure Wo (330 De...	None						144		
53	Structure Wi (0 Deg)	None						144		
54	Structure Wi (30 Deg)	None						144		
55	Structure Wi (60 Deg)	None						144		
56	Structure Wi (90 Deg)	None						144		
57	Structure Wi (120 Deg)	None						144		
58	Structure Wi (150 Deg)	None						144		
59	Structure Wi (180 Deg)	None						144		
60	Structure Wi (210 Deg)	None						144		
61	Structure Wi (240 Deg)	None						144		
62	Structure Wi (270 Deg)	None						144		
63	Structure Wi (300 Deg)	None						144		
64	Structure Wi (330 Deg)	None						144		
65	Structure Wm (0 Deg)	None						144		
66	Structure Wm (30 Deg)	None						144		
67	Structure Wm (60 Deg)	None						144		
68	Structure Wm (90 Deg)	None						144		
69	Structure Wm (120 D...	None						144		
70	Structure Wm (150 D...	None						144		
71	Structure Wm (180 D...	None						144		
72	Structure Wm (210 D...	None						144		
73	Structure Wm (240 D...	None						144		
74	Structure Wm (270 D...	None						144		
75	Structure Wm (300 D...	None						144		
76	Structure Wm (330 D...	None						144		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					222			
82	Antenna Eh (0 Deg)	None					148			
83	Antenna Eh (90 Deg)	None					148			
84	Structure Ev	ELY		-.044					3	
85	Structure Eh (0 Deg)	ELZ			-.11				3	
86	Structure Eh (90 Deg)	ELX	.11						3	
87	BLC 39 Transient Are...	None						57		
88	BLC 40 Transient Are...	None						57		
89	BLC 84 Transient Are...	None						57		
90	BLC 85 Transient Are...	None						57		
91	BLC 86 Transient Are...	None						57		

Load Combinations

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	3	1	41	1												
2	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	4	1	42	1												
3	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	5	1	43	1												
4	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	6	1	44	1												

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
5	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	7	1	45	1												
6	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	8	1	46	1												
7	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	9	1	47	1												
8	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	10	1	48	1												
9	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	11	1	49	1												
10	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	12	1	50	1												
11	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	13	1	51	1												
12	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	14	1	52	1												
13	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1								
14	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1								
15	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1								
16	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1								
17	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1								
18	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1								
19	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1								
20	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX					
53	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	ELZ	.866	ELX	.5				
54	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	ELZ	.5	ELX	.866				
55	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1				
56	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	ELZ	-.5	ELX	.866				

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
57	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
58	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX					
59	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
60	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
61	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1				
62	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
63	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5	ELZ	.866	ELX	-.5				
64	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX					
65	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	ELZ	.866	ELX	.5				
66	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	ELZ	.5	ELX	.866				
67	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1				
68	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
69	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
70	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX					
71	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
72	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
73	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1				
74	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
75	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5	ELZ	.866	ELX	-.5				

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
1	N1	-7.25	0	4.693797	0	
2	N2	7.25	0	4.693797	0	
3	N3	0	0	0	0	
4	N4	0	0	-1.645833	0	
5	N5	-2e-14	0	-4.334777	0	
6	N6	-3e-14	0	-8.145874	0	
7	N7	2.58	0	-4.334777	0	
8	N8	-2.58	0	-4.334777	0	
9	N9	2.580391	0	-4.584809	0	
10	N10	-2.580391	0	-4.584809	0	
11	N11	0	0	-1.145833	0	
12	N12	2.497058	0	-4.729147	0	
13	N13	2.641431	0	-4.812501	0	
14	N14	-2.497058	0	-4.729147	0	
15	N15	-2.641431	0	-4.812501	0	
16	N16	0.752116	0	-8.084891	0	
17	N17	0.607743	0	-8.001537	0	
18	N18	-0.752116	0	-8.084891	0	
19	N19	-0.607743	0	-8.001537	0	
20	N20	-0.524409	0	-8.145874	0	
21	N21	0.524409	0	-8.145874	0	
22	N22	0.125	0	-8.145874	0	
23	N23	-.125	0	-8.145874	0	
24	N24	2.325338	0	-4.334777	0	
25	N25	-2.325338	0	-4.334777	0	
26	N26	-6.998693	0	4.693797	0	
27	N27	-6.998693	3.5	4.693797	0	
28	N28	-6.998693	0	4.943797	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
29	N29	-6.998693	3.5	4.943797	0	
30	N30	-2e-14	0	-7.145874	0	
31	N31	-2e-14	-.25	-7.145874	0	
32	N32	0.001307	-5.125	-1.895833	0	
33	N33	0	-5.125	-1.145833	0	
34	N34	-6.998693	5.666667	4.943797	0	
35	N35	-6.998693	-2.333333	4.943797	0	
36	N36	0.816164	3.5	-7.973957	0	
37	N37	0.703364	3.5	-7.908832	0	
38	N38	-0.816164	3.5	-7.973957	0	
39	N39	-0.703364	3.5	-7.908832	0	
40	N40	-7.25	3.5	4.693797	0	
41	N41	7.25	3.5	4.693797	0	
42	N42	6.998693	0	4.693797	0	
43	N43	6.998693	3.5	4.693797	0	
44	N44	6.998693	0	4.943797	0	
45	N45	6.998693	3.5	4.943797	0	
46	N46	6.998693	5.666667	4.943797	0	
47	N47	6.998693	-2.333333	4.943797	0	
48	N48	0.001307	0	4.693797	0	
49	N49	0.001307	3.5	4.693797	0	
50	N50	0.001307	0	4.943797	0	
51	N51	0.001307	3.5	4.943797	0	
52	N52	0.001307	5.666667	4.943797	0	
53	N53	0.001307	-2.333333	4.943797	0	
54	N54	-3.498693	0	4.693797	0	
55	N55	-3.498693	3.5	4.693797	0	
56	N56	-3.498693	0	4.943797	0	
57	N57	-3.498693	3.5	4.943797	0	
58	N58	-3.498693	5.666667	4.943797	0	
59	N59	-3.498693	-2.333333	4.943797	0	
60	N60	3.498693	0	4.693797	0	
61	N61	3.498693	3.5	4.693797	0	
62	N62	3.498693	0	4.943797	0	
63	N63	3.498693	3.5	4.943797	0	
64	N64	3.498693	5.666667	4.943797	0	
65	N65	3.498693	-2.333333	4.943797	0	
66	N66	-1.425333	0	0.822917	0	
67	N67	-3.754027	0	2.167388	0	
68	N68	-7.054534	0	4.072937	0	
69	N69	-5.044027	0	-0.066957	0	
70	N70	-2.464027	0	4.401734	0	
71	N71	-5.260757	0	0.05772	0	
72	N72	-2.680366	0	4.527089	0	
73	N73	-0.992321	0	0.572917	0	
74	N74	-5.34409	0	0.202058	0	
75	N75	-5.488464	0	0.118704	0	
76	N76	-2.847032	0	4.527089	0	
77	N77	-2.847032	0	4.693797	0	
78	N78	-7.377779	0	3.391094	0	
79	N79	-7.233405	0	3.474448	0	
80	N80	-6.625663	0	4.693797	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
81	N81	-6.625663	0	4.527089	0	
82	N82	-6.792329	0	4.527089	0	
83	N83	-7.316739	0	3.618785	0	
84	N84	-7.117034	0	3.964684	0	
85	N85	-6.992034	0	4.18119	0	
86	N86	-4.916696	0	0.153586	0	
87	N87	-2.591358	0	4.18119	0	
88	N88	-6.188509	0	3.572937	0	
89	N89	-6.188509	-.25	3.572937	0	
90	N90	-1.642493	-5.125	0.946785	0	
91	N91	-0.992321	-5.125	0.572917	0	
92	N92	-7.313731	3.5	3.280159	0	
93	N93	-7.200931	3.5	3.345284	0	
94	N94	-6.497567	3.5	4.693797	0	
95	N95	-6.497567	3.5	4.563547	0	
96	N96	1.425333	0	0.822917	0	
97	N97	3.754027	0	2.167388	0	
98	N98	7.054534	0	4.072937	0	
99	N99	2.464027	0	4.401734	0	
100	N100	5.044027	0	-0.066957	0	
101	N101	2.680366	0	4.527089	0	
102	N102	5.260757	0	0.05772	0	
103	N103	0.992321	0	0.572917	0	
104	N104	2.847032	0	4.527089	0	
105	N105	2.847032	0	4.693797	0	
106	N106	5.34409	0	0.202058	0	
107	N107	5.488464	0	0.118704	0	
108	N108	6.625663	0	4.693797	0	
109	N109	6.625663	0	4.527089	0	
110	N110	7.377779	0	3.391094	0	
111	N111	7.233405	0	3.474448	0	
112	N112	7.316739	0	3.618785	0	
113	N113	6.792329	0	4.527089	0	
114	N114	6.992034	0	4.18119	0	
115	N115	7.117034	0	3.964684	0	
116	N116	2.591358	0	4.18119	0	
117	N117	4.916696	0	0.153586	0	
118	N118	6.188509	0	3.572937	0	
119	N119	6.188509	-.25	3.572937	0	
120	N120	1.641187	-5.125	0.949048	0	
121	N121	0.992321	-5.125	0.572917	0	
122	N122	6.497567	3.5	4.693797	0	
123	N123	6.497567	3.5	4.563547	0	
124	N124	7.313731	3.5	3.280159	0	
125	N125	7.200931	3.5	3.345284	0	
126	N126	7.689948	0	3.931786	0	
127	N127	0.439948	0	-8.625583	0	
128	N128	7.564294	0	3.714148	0	
129	N129	7.564294	3.5	3.714148	0	
130	N130	7.780801	0	3.589148	0	
131	N131	7.780801	3.5	3.589148	0	
132	N132	7.780801	5.666667	3.589148	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
133	N133	7.780801	-2.333333	3.589148	0	
134	N134	7.689948	3.5	3.931786	0	
135	N135	0.439948	3.5	-8.625583	0	
136	N136	0.565601	0	-8.407945	0	
137	N137	0.565601	3.5	-8.407945	0	
138	N138	0.782107	0	-8.532945	0	
139	N139	0.782107	3.5	-8.532945	0	
140	N140	0.782107	5.666667	-8.532945	0	
141	N141	0.782107	-2.333333	-8.532945	0	
142	N142	4.064294	0	-2.34803	0	
143	N143	4.064294	3.5	-2.34803	0	
144	N144	4.280801	0	-2.47303	0	
145	N145	4.280801	3.5	-2.47303	0	
146	N146	4.280801	5.666667	-2.47303	0	
147	N147	4.280801	-2.333333	-2.47303	0	
148	N148	5.814294	0	0.683059	0	
149	N149	5.814294	3.5	0.683059	0	
150	N150	6.030801	0	0.558059	0	
151	N151	6.030801	3.5	0.558059	0	
152	N152	6.030801	5.666667	0.558059	0	
153	N153	6.030801	-2.333333	0.558059	0	
154	N154	2.315601	0	-5.376856	0	
155	N155	2.315601	3.5	-5.376856	0	
156	N156	2.532107	0	-5.501856	0	
157	N157	2.532107	3.5	-5.501856	0	
158	N158	2.532107	5.666667	-5.501856	0	
159	N159	2.532107	-2.333333	-5.501856	0	
160	N160	-0.439948	0	-8.625583	0	
161	N161	-7.689948	0	3.931786	0	
162	N162	-0.565601	0	-8.407945	0	
163	N163	-0.565601	3.5	-8.407945	0	
164	N164	-0.782107	0	-8.532945	0	
165	N165	-0.782107	3.5	-8.532945	0	
166	N166	-0.782107	5.666667	-8.532945	0	
167	N167	-0.782107	-2.333333	-8.532945	0	
168	N168	-0.439948	3.5	-8.625583	0	
169	N169	-7.689948	3.5	3.931786	0	
170	N170	-7.564294	0	3.714148	0	
171	N171	-7.564294	3.5	3.714148	0	
172	N172	-7.780801	0	3.589148	0	
173	N173	-7.780801	3.5	3.589148	0	
174	N174	-7.780801	5.666667	3.589148	0	
175	N175	-7.780801	-2.333333	3.589148	0	
176	N176	-4.065601	0	-2.345767	0	
177	N177	-4.065601	3.5	-2.345767	0	
178	N178	-4.282107	0	-2.470767	0	
179	N179	-4.282107	3.5	-2.470767	0	
180	N180	-4.282107	5.666667	-2.470767	0	
181	N181	-4.282107	-2.333333	-2.470767	0	
182	N182	-2.315601	0	-5.376856	0	
183	N183	-2.315601	3.5	-5.376856	0	
184	N184	-2.532107	0	-5.501856	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
185	N185	-2.532107	3.5	-5.501856	0	
186	N186	-2.532107	5.666667	-5.501856	0	
187	N187	-2.532107	-2.333333	-5.501856	0	
188	N188	-5.814294	0	0.683059	0	
189	N189	-5.814294	3.5	0.683059	0	
190	N190	-6.030801	0	0.558059	0	
191	N191	-6.030801	3.5	0.558059	0	
192	N192	-6.030801	5.666667	0.558059	0	
193	N193	-6.030801	-2.333333	0.558059	0	
194	N194	0	0	-2.645833	0	
195	N195	-0.333333	0	-2.645833	0	
196	N196	-0.333333	2	-2.645833	0	
197	N197	-0.333333	-2	-2.645833	0	
198	N198	0.333333	0	-2.645833	0	
199	N199	0.333333	2	-2.645833	0	
200	N200	0.333333	-2	-2.645833	0	
201	N201	-2.291359	0	1.322917	0	
202	N202	-2.124692	0	1.611592	0	
203	N203	-2.124692	2	1.611592	0	
204	N204	-2.124692	-2	1.611592	0	
205	N205	-2.458026	0	1.034242	0	
206	N206	-2.458026	2	1.034242	0	
207	N207	-2.458026	-2	1.034242	0	
208	N208	2.291359	0	1.322917	0	
209	N209	2.458026	0	1.034242	0	
210	N210	2.458026	2	1.034242	0	
211	N211	2.458026	-2	1.034242	0	
212	N212	2.124692	0	1.611592	0	
213	N213	2.124692	2	1.611592	0	
214	N214	2.124692	-2	1.611592	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Footrails	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Grating Angles	L2X2X3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Handrails	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Standoff Arm	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
5	Plan Bracing	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
6	Mount Pipes	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
7	OVP pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	Kicker	LL2.5X2.5X3X3	Beam	Double Angle (...	A36 Gr.36	Typical	1.8	2.46	1.07	.023
9	Support Rail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
10	Footrail Connection ...	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
11	Plan Bracing Connec...	PL3/8x6	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
12	Handrail Corner Brac...	L2.5X2.5X4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026

Cold Formed Steel Section Sets

	Label	Shape	Type	Design ...	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	1.5CU1.25X035	Beam	CU	A570_33	Typical	.131	.022	.052	5.4e-5

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	AL1	AA CS14X1...	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.5	58	1.2
7	Q235	29000	11154	.3	.65	.49	34	1.5	58	1.2
8	J429-Gr5	29000	11154	.3	.65	.49	92	1.5	120	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570_33	29500	11346	.3	.65	.49	33	52
2	A607_C1_55	29500	11346	.3	.65	.49	55	70

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...	Density[...	Table B.4	kt	Ftu[ksi]	Fty[ksi]	Fcy[ksi]	Fsu[ksi]	Ct
1	3003-H14	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	0	0	1
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B...	0	0	0	0	0	1
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	0	0	1
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B....	0	0	0	0	0	1
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B....	0	0	0	0	0	1
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B...	0	0	0	0	0	1

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N6	N4			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
2	M2	N8	N5			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
3	M3	N5	N7			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
4	M4	N1	N2			Footrails	Beam	Pipe	A53 Gr.B	Typical
5	M5	N7	N9			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
6	M6	N8	N10			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
7	M7	N11	N4			RIGID	None	None	RIGID	Typical
8	M8	N9	N12			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
9	M9	N12	N13			RIGID	None	None	RIGID	Typical
10	M10	N10	N14			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
11	M11	N14	N15			RIGID	None	None	RIGID	Typical
12	M12	N16	N17			RIGID	None	None	RIGID	Typical
13	M13	N18	N19			RIGID	None	None	RIGID	Typical
14	M14	N20	N19			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
15	M15	N21	N17			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
16	M16	N21	N6			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
17	M17	N6	N20			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
18	M18	N22	N24			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N25	N23			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
20	M20	N29	N27			RIGID	None	None	RIGID	Typical
21	M21	N28	N26			RIGID	None	None	RIGID	Typical
22	M22	N30	N31			RIGID	None	None	RIGID	Typical
23	M23	N31	N32			Kicker	Beam	Double Angle (...	A36 Gr.36	Typical
24	M24	N33	N32			RIGID	None	None	RIGID	Typical
25	MP5A	N34	N35			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
26	M26	N36	N37			RIGID	None	None	RIGID	Typical
27	M27	N38	N39			RIGID	None	None	RIGID	Typical
28	M28	N37	N39		90	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N40	N41			Support Rail	Beam	Pipe	A53 Gr.B	Typical
30	M30	N45	N43			RIGID	None	None	RIGID	Typical
31	M31	N44	N42			RIGID	None	None	RIGID	Typical
32	MP1A	N46	N47			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
33	M33	N51	N49			RIGID	None	None	RIGID	Typical
34	M34	N50	N48			RIGID	None	None	RIGID	Typical
35	MP3A	N52	N53			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
36	M36	N57	N55			RIGID	None	None	RIGID	Typical
37	M37	N56	N54			RIGID	None	None	RIGID	Typical
38	MP4A	N58	N59			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
39	M42	N63	N61			RIGID	None	None	RIGID	Typical
40	M43	N62	N60			RIGID	None	None	RIGID	Typical
41	MP2A	N64	N65			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
42	M45	N68	N66			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
43	M46	N70	N67			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
44	M47	N67	N69			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
45	M48	N69	N71			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
46	M49	N70	N72			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
47	M50	N73	N66			RIGID	None	None	RIGID	Typical
48	M51	N71	N74			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
49	M52	N74	N75			RIGID	None	None	RIGID	Typical
50	M53	N72	N76			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
51	M54	N76	N77			RIGID	None	None	RIGID	Typical
52	M55	N78	N79			RIGID	None	None	RIGID	Typical
53	M56	N80	N81			RIGID	None	None	RIGID	Typical
54	M57	N82	N81			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
55	M58	N83	N79			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
56	M59	N83	N68			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
57	M60	N68	N82			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
58	M61	N84	N86			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
59	M62	N87	N85			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
60	M63	N88	N89		240	RIGID	None	None	RIGID	Typical
61	M64	N89	N90		.005	Kicker	Beam	Double Angle (...	A36 Gr.36	Typical
62	M65	N91	N90			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
63	M66	N92	N93			RIGID	None	None	RIGID	Typical
64	M67	N94	N95			RIGID	None	None	RIGID	Typical
65	M68	N93	N95		90	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
66	M69	N98	N96			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
67	M70	N100	N97			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
68	M71	N97	N99			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
69	M72	N99	N101			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
70	M73	N100	N102			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
71	M74	N103	N96			RIGID	None	None	RIGID	Typical
72	M75	N101	N104			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
73	M76	N104	N105			RIGID	None	None	RIGID	Typical
74	M77	N102	N106			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
75	M78	N106	N107			RIGID	None	None	RIGID	Typical
76	M79	N108	N109			RIGID	None	None	RIGID	Typical
77	M80	N110	N111			RIGID	None	None	RIGID	Typical
78	M81	N112	N111			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
79	M82	N113	N109			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
80	M83	N113	N98			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
81	M84	N98	N112			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
82	M85	N114	N116			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
83	M86	N117	N115			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
84	M87	N118	N119		120	RIGID	None	None	RIGID	Typical
85	M88	N119	N120		.005	Kicker	Beam	Double Angle (...	A36 Gr.36	Typical
86	M89	N121	N120			RIGID	None	None	RIGID	Typical
87	M90	N122	N123			RIGID	None	None	RIGID	Typical
88	M91	N124	N125			RIGID	None	None	RIGID	Typical
89	M92	N123	N125		90	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
90	M93	N126	N127			Footrails	Beam	Pipe	A53 Gr.B	Typical
91	M94	N131	N129			RIGID	None	None	RIGID	Typical
92	M95	N130	N128			RIGID	None	None	RIGID	Typical
93	MP5C	N132	N133		240	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
94	M97	N134	N135			Support Rail	Beam	Pipe	A53 Gr.B	Typical
95	M98	N139	N137			RIGID	None	None	RIGID	Typical
96	M99	N138	N136			RIGID	None	None	RIGID	Typical
97	MP1C	N140	N141		240	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
98	M101	N145	N143			RIGID	None	None	RIGID	Typical
99	M102	N144	N142			RIGID	None	None	RIGID	Typical
100	MP3C	N146	N147		240	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
101	M104	N151	N149			RIGID	None	None	RIGID	Typical
102	M105	N150	N148			RIGID	None	None	RIGID	Typical
103	MP4C	N152	N153		240	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
104	M110	N157	N155			RIGID	None	None	RIGID	Typical
105	M111	N156	N154			RIGID	None	None	RIGID	Typical
106	MP2C	N158	N159		240	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
107	M113	N160	N161			Footrails	Beam	Pipe	A53 Gr.B	Typical
108	M114	N165	N163			RIGID	None	None	RIGID	Typical
109	M115	N164	N162			RIGID	None	None	RIGID	Typical
110	MP5B	N166	N167		120	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
111	M117	N168	N169			Support Rail	Beam	Pipe	A53 Gr.B	Typical
112	M118	N173	N171			RIGID	None	None	RIGID	Typical
113	M119	N172	N170			RIGID	None	None	RIGID	Typical
114	MP1B	N174	N175		120	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
115	M121	N179	N177			RIGID	None	None	RIGID	Typical
116	M122	N178	N176			RIGID	None	None	RIGID	Typical
117	MP3B	N180	N181		120	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
118	M124	N185	N183			RIGID	None	None	RIGID	Typical
119	M125	N184	N182			RIGID	None	None	RIGID	Typical
120	MP4B	N186	N187		120	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
121	M130	N191	N189			RIGID	None	None	RIGID	Typical
122	M131	N190	N188			RIGID	None	None	RIGID	Typical
123	MP2B	N192	N193		120	Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
124	M133	N195	N194			RIGID	None	None	RIGID	Typical
125	R1	N196	N197			OVP pipe	Beam	Pipe	A53 Gr.B	Typical
126	M126	N198	N194			RIGID	None	None	RIGID	Typical
127	R2	N199	N200			OVP pipe	Beam	Pipe	A53 Gr.B	Typical
128	M128	N202	N201			RIGID	None	None	RIGID	Typical
129	R4	N203	N204		240	OVP pipe	Beam	Pipe	A53 Gr.B	Typical
130	M130A	N205	N201			RIGID	None	None	RIGID	Typical
131	R3	N206	N207		240	OVP pipe	Beam	Pipe	A53 Gr.B	Typical
132	M132	N209	N208			RIGID	None	None	RIGID	Typical
133	R6	N210	N211		120	OVP pipe	Beam	Pipe	A53 Gr.B	Typical
134	M134	N212	N208			RIGID	None	None	RIGID	Typical
135	R5	N213	N214		120	OVP pipe	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2				2		Yes				None
3	M3			2			Yes				None
4	M4						Yes				None
5	M5			2			Yes				None
6	M6			2			Yes				None
7	M7						Yes	** NA **			None
8	M8						Yes				None
9	M9		BenPIN				Yes	** NA **			None
10	M10						Yes				None
11	M11		BenPIN				Yes	** NA **			None
12	M12	BenPIN					Yes	** NA **			None
13	M13	BenPIN					Yes	** NA **			None
14	M14						Yes				None
15	M15						Yes				None
16	M16				2		Yes				None
17	M17			2			Yes				None
18	M18						Yes		+y+2.1		None
19	M19						Yes		+y+2.1		None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22	BenPIN					Yes	** NA **			None
23	M23		BenPIN				Yes				None
24	M24						Yes	** NA **			None
25	MP5A						Yes				None
26	M26						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
27	M27						Yes	** NA **			None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	MP1A						Yes				None
33	M33						Yes	** NA **			None
34	M34						Yes	** NA **			None
35	MP3A						Yes				None
36	M36						Yes	** NA **			None
37	M37						Yes	** NA **			None
38	MP4A						Yes				None
39	M42						Yes	** NA **			None
40	M43						Yes	** NA **			None
41	MP2A						Yes				None
42	M45						Yes				None
43	M46				2		Yes				None
44	M47			2			Yes				None
45	M48			2			Yes				None
46	M49			2			Yes				None
47	M50						Yes	** NA **			None
48	M51						Yes				None
49	M52		BenPIN				Yes	** NA **			None
50	M53						Yes				None
51	M54		BenPIN				Yes	** NA **			None
52	M55	BenPIN					Yes	** NA **			None
53	M56	BenPIN					Yes	** NA **			None
54	M57						Yes				None
55	M58						Yes				None
56	M59				2		Yes				None
57	M60			2			Yes				None
58	M61						Yes		+y+2.1		None
59	M62						Yes		+y+2.1		None
60	M63	BenPIN					Yes	** NA **			None
61	M64		BenPIN				Yes				None
62	M65						Yes	** NA **			None
63	M66						Yes	** NA **			None
64	M67						Yes	** NA **			None
65	M68						Yes				None
66	M69						Yes				None
67	M70				2		Yes				None
68	M71			2			Yes				None
69	M72			2			Yes				None
70	M73			2			Yes				None
71	M74						Yes	** NA **			None
72	M75						Yes				None
73	M76		BenPIN				Yes	** NA **			None
74	M77						Yes				None
75	M78		BenPIN				Yes	** NA **			None
76	M79	BenPIN					Yes	** NA **			None
77	M80	BenPIN					Yes	** NA **			None
78	M81						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
79	M82						Yes				None
80	M83				2		Yes				None
81	M84			2			Yes				None
82	M85						Yes		+y+2.1		None
83	M86						Yes		+y+2.1		None
84	M87	BenPIN					Yes	** NA **			None
85	M88		BenPIN				Yes				None
86	M89						Yes	** NA **			None
87	M90						Yes	** NA **			None
88	M91						Yes	** NA **			None
89	M92						Yes				None
90	M93						Yes				None
91	M94						Yes	** NA **			None
92	M95						Yes	** NA **			None
93	MP5C						Yes				None
94	M97						Yes				None
95	M98						Yes	** NA **			None
96	M99						Yes	** NA **			None
97	MP1C						Yes				None
98	M101						Yes	** NA **			None
99	M102						Yes	** NA **			None
100	MP3C						Yes				None
101	M104						Yes	** NA **			None
102	M105						Yes	** NA **			None
103	MP4C						Yes				None
104	M110						Yes	** NA **			None
105	M111						Yes	** NA **			None
106	MP2C						Yes				None
107	M113						Yes				None
108	M114						Yes	** NA **			None
109	M115						Yes	** NA **			None
110	MP5B						Yes				None
111	M117						Yes				None
112	M118						Yes	** NA **			None
113	M119						Yes	** NA **			None
114	MP1B						Yes				None
115	M121						Yes	** NA **			None
116	M122						Yes	** NA **			None
117	MP3B						Yes				None
118	M124						Yes	** NA **			None
119	M125						Yes	** NA **			None
120	MP4B						Yes				None
121	M130						Yes	** NA **			None
122	M131						Yes	** NA **			None
123	MP2B						Yes				None
124	M133						Yes	** NA **			None
125	R1						Yes				None
126	M126						Yes	** NA **			None
127	R2						Yes				None
128	M128						Yes	** NA **			None
129	R4						Yes				None
130	M130A						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
131	R3						Yes				None
132	M132						Yes	** NA **			None
133	R6						Yes				None
134	M134						Yes	** NA **			None
135	R5						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Arm	6.5			Lbyy			2.1	2.1		Lateral
2	M2	Plan Bracing	2.58			Lbyy			1	1		Lateral
3	M3	Plan Bracing	2.58			Lbyy			1	1		Lateral
4	M4	Footrails	14.5			Lbyy			1	1		Lateral
5	M5	Plan Bracin...	.25			Lbyy			.65	.65		Lateral
6	M6	Plan Bracin...	.25			Lbyy			.65	.65		Lateral
7	M8	Plan Bracin...	.167			Lbyy						Lateral
8	M10	Plan Bracin...	.167			Lbyy						Lateral
9	M14	Footrail Con...	.167			Lbyy						Lateral
10	M15	Footrail Con...	.167			Lbyy						Lateral
11	M16	Footrail Con...	.524			Lbyy						Lateral
12	M17	Footrail Con...	.524			Lbyy						Lateral
13	M18	Grating Ang...	4.401			Lbyy						Lateral
14	M19	Grating Ang...	4.401			Lbyy						Lateral
15	M23	Kicker	7.164			Lbyy						Lateral
16	MP5A	Mount Pipes	8			Lbyy						Lateral
17	M28	Handrail Co...	1.407			Lbyy						Lateral
18	M29	Support Rail	14.5			Lbyy						Lateral
19	MP1A	Mount Pipes	8			Lbyy						Lateral
20	MP3A	Mount Pipes	8			Lbyy						Lateral
21	MP4A	Mount Pipes	8			Lbyy						Lateral
22	MP2A	Mount Pipes	8			Lbyy						Lateral
23	M45	Standoff Arm	6.5			Lbyy			2.1	2.1		Lateral
24	M46	Plan Bracing	2.58			Lbyy			1	1		Lateral
25	M47	Plan Bracing	2.58			Lbyy			1	1		Lateral
26	M48	Plan Bracin...	.25			Lbyy			.65	.65		Lateral
27	M49	Plan Bracin...	.25			Lbyy			.65	.65		Lateral
28	M51	Plan Bracin...	.167			Lbyy						Lateral
29	M53	Plan Bracin...	.167			Lbyy						Lateral
30	M57	Footrail Con...	.167			Lbyy						Lateral
31	M58	Footrail Con...	.167			Lbyy						Lateral
32	M59	Footrail Con...	.524			Lbyy						Lateral
33	M60	Footrail Con...	.524			Lbyy						Lateral
34	M61	Grating Ang...	4.401			Lbyy						Lateral
35	M62	Grating Ang...	4.401			Lbyy						Lateral
36	M64	Kicker	7.164			Lbyy						Lateral
37	M68	Handrail Co...	1.407			Lbyy						Lateral
38	M69	Standoff Arm	6.5			Lbyy			2.1	2.1		Lateral
39	M70	Plan Bracing	2.58			Lbyy			1	1		Lateral
40	M71	Plan Bracing	2.58			Lbyy			1	1		Lateral
41	M72	Plan Bracin...	.25			Lbyy			.65	.65		Lateral
42	M73	Plan Bracin...	.25			Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
43	M75	Plan Bracin...	.167			Lbyy						Lateral
44	M77	Plan Bracin...	.167			Lbyy						Lateral
45	M81	Footrail Con...	.167			Lbyy						Lateral
46	M82	Footrail Con...	.167			Lbyy						Lateral
47	M83	Footrail Con...	.524			Lbyy						Lateral
48	M84	Footrail Con...	.524			Lbyy						Lateral
49	M85	Grating Ang...	4.401			Lbyy						Lateral
50	M86	Grating Ang...	4.401			Lbyy						Lateral
51	M88	Kicker	7.164			Lbyy						Lateral
52	M92	Handrail Co...	1.407			Lbyy						Lateral
53	M93	Footrails	14.5			Lbyy			1	1		Lateral
54	MP5C	Mount Pipes	8			Lbyy						Lateral
55	M97	Support Rail	14.5			Lbyy						Lateral
56	MP1C	Mount Pipes	8			Lbyy						Lateral
57	MP3C	Mount Pipes	8			Lbyy						Lateral
58	MP4C	Mount Pipes	8			Lbyy						Lateral
59	MP2C	Mount Pipes	8			Lbyy						Lateral
60	M113	Footrails	14.5			Lbyy			1	1		Lateral
61	MP5B	Mount Pipes	8			Lbyy						Lateral
62	M117	Support Rail	14.5			Lbyy						Lateral
63	MP1B	Mount Pipes	8			Lbyy						Lateral
64	MP3B	Mount Pipes	8			Lbyy						Lateral
65	MP4B	Mount Pipes	8			Lbyy						Lateral
66	MP2B	Mount Pipes	8			Lbyy						Lateral
67	R1	OVP pipe	4			Lbyy						Lateral
68	R2	OVP pipe	4			Lbyy						Lateral
69	R4	OVP pipe	4			Lbyy						Lateral
70	R3	OVP pipe	4			Lbyy						Lateral
71	R6	OVP pipe	4			Lbyy						Lateral
72	R5	OVP pipe	4			Lbyy						Lateral

Cold Formed Steel Design Parameters

Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-torque[ft]	Kyy	Kzz	Cb	R	a[ft]	Funct...
No Data to Print ...													

Aluminum Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
No Data to Print ...											

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
No Data to Print ...			

Member Area Loads (BLC 39 : Structure D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N23	N22	N24	N25	Y	Two Way	-.005
2	N85	N84	N86	N87	Y	Two Way	-.005
3	N115	N114	N116	N117	Y	Two Way	-.005

Member Area Loads (BLC 40 : Structure Di)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N23	N22	N24	N25	Y	Two Way	-.01
2	N85	N84	N86	N87	Y	Two Way	-.01
3	N115	N114	N116	N117	Y	Two Way	-.01

Member Area Loads (BLC 84 : Structure Ev)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N23	N22	N24	N25	Y	Two Way	-.000229
2	N85	N84	N86	N87	Y	Two Way	-.000229
3	N115	N114	N116	N117	Y	Two Way	-.000229

Member Area Loads (BLC 85 : Structure Eh (0 Deg))

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N23	N22	N24	N25	Z	Two Way	-.000571
2	N85	N84	N86	N87	Z	Two Way	-.000571
3	N115	N114	N116	N117	Z	Two Way	-.000571

Member Area Loads (BLC 86 : Structure Eh (90 Deg))

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N23	N22	N24	N25	X	Two Way	.000571
2	N85	N84	N86	N87	X	Two Way	.000571
3	N115	N114	N116	N117	X	Two Way	.000571

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N3						
2	N4						
3	N11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N32						
5	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N66						
7	N73	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N90						
9	N91	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N96						
11	N103	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N120						
13	N121	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N194						
15	N195						
16	N196						
17	N197						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
18	N198						
19	N199						
20	N200						
21	N201						
22	N202						
23	N203						
24	N204						
25	N205						
26	N206						
27	N207						
28	N208						
29	N209						
30	N210						
31	N211						
32	N212						
33	N213						
34	N214						

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N11	max	2535.044	10	1716.544	19	7009.917	1	3.246	18	4.947	4	.614	4
2		min	-2531.48	4	527.335	64	-4363.795	7	1.071	64	-4.961	10	-.57	10
3	N33	max	58.144	10	3086.993	13	-197.843	7	2.315	13	.046	4	.004	13
4		min	-58.181	4	169.64	7	-3093.024	13	.127	7	-.042	10	0	7
5	N73	max	6160.954	9	1428.319	15	2649.514	2	-.202	12	4.179	12	-.825	70
6		min	-3848.634	3	455.241	72	-3988.895	8	-1.627	18	-4.203	6	-2.494	24
7	N91	max	-122.952	3	3096.237	21	1551.902	21	-.043	3	.046	12	-.075	3
8		min	-2686.483	21	115.114	3	71.019	3	-1.158	21	-.042	6	-2.013	21
9	N103	max	3814.652	11	1463.069	23	2368.892	12	-.18	2	4.267	8	2.632	14
10		min	-6123.108	5	467.938	68	-3706.826	6	-1.503	20	-4.251	2	.869	70
11	N121	max	2661.471	17	3067.316	17	1535.865	17	-.053	11	.046	8	1.99	17
12		min	144.966	11	139.865	11	83.596	11	-1.154	17	-.042	2	.091	11
13	Totals:	max	10205.131	10	12942.648	19	9712.389	1						
14		min	-10205.21	4	4645.006	75	-9712.327	7						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M97	PIPE_2.0	.518	3.625	3	.337	.755		3	4678.524	32130	1.872	1.872	2....	H3-6
2	M117	PIPE_2.0	.510	3.625	10	.329	.755		11	4678.524	32130	1.872	1.872	1....	H3-6
3	M29	PIPE_2.0	.491	3.625	7	.333	.755		7	4678.524	32130	1.872	1.872	2....	H3-6
4	M6	PL3/8x6	.466	0	10	.405	0	y	17	72761.657	72900	.57	9.113	1....	H1-1b
5	M77	PL3/8x6	.433	.167	10	.386	0	y	17	71601.728	72900	.57	9.113	1....	H1-1b
6	M51	PL3/8x6	.424	.167	3	.363	0	y	21	71601.728	72900	.57	9.113	1....	H1-1b
7	M5	PL3/8x6	.423	0	5	.482	0	y	21	72761.657	72900	.57	9.113	2....	H1-1b
8	MP3A	PIPE_2.5	.418	5.667	4	.100	5.667		4	30038.461	50715	3.596	3.596	3....	H1-1b
9	M53	PL3/8x6	.416	.167	2	.382	0	y	21	71601.728	72900	.57	9.113	1....	H1-1b
10	M73	PL3/8x6	.414	0	2	.431	0	y	21	72761.657	72900	.57	9.113	1....	H1-1b
11	M49	PL3/8x6	.414	0	6	.396	0	y	14	72761.657	72900	.57	9.113	1....	H1-1b
12	MP3B	PIPE_2.5	.412	5.667	8	.097	5.667		2	30038.461	50715	3.596	3.596	3....	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
13	M92	L2.5X2.5X4	.412	0	3	.108	1.407	z	2	36145.055	38556	1.114	2.537	2....	H2-1
14	M72	PL3/8x6	.400	0	8	.481	0	y	24	72761.657	72900	.57	9.113	1....	H1-1b
15	M68	L2.5X2.5X4	.399	0	7	.106	0	z	12	36145.055	38556	1.114	2.537	2....	H2-1
16	MP4A	PIPE_2.5	.396	5.667	10	.174	3.917		8	30038.461	50715	3.596	3.596	3....	H1-1b
17	M8	PL3/8x6	.395	.167	8	.379	0	y	13	71601.728	72900	.57	9.113	1....	H1-1b
18	MP3C	PIPE_2.5	.394	5.667	6	.098	5.667		12	30038.461	50715	3.596	3.596	3....	H1-1b
19	M75	PL3/8x6	.393	.167	11	.374	0	y	16	71601.728	72900	.57	9.113	1....	H1-1b
20	MP4C	PIPE_2.5	.392	5.667	6	.182	5.667		4	30038.461	50715	3.596	3.596	3....	H1-1b
21	M28	L2.5X2.5X4	.389	0	11	.113	0	z	4	36145.055	38556	1.114	2.537	2....	H2-1
22	M10	PL3/8x6	.389	.167	6	.387	0	y	13	71601.728	72900	.57	9.113	1....	H1-1b
23	M64	LL2.5X2.5X3...	.386	0	21	.009	7.164	y	20	30306.587	58320	3.954	2.508	1....	H1-1b
24	M23	LL2.5X2.5X3...	.385	0	13	.009	7.164	y	24	30306.587	58320	3.954	2.508	1....	H1-1b
25	M48	PL3/8x6	.384	0	1	.467	0	y	16	72761.657	72900	.57	9.113	2....	H1-1b
26	M88	LL2.5X2.5X3...	.382	0	17	.009	7.164	y	4	30306.587	58320	3.954	2.508	1....	H1-1b
27	MP2A	PIPE_2.5	.377	5.667	4	.163	2.167		7	30038.461	50715	3.596	3.596	3....	H1-1b
28	MP4B	PIPE_2.5	.377	5.667	2	.180	2.167		11	30038.461	50715	3.596	3.596	2....	H1-1b
29	M59	PL1/2x6	.373	.358	9	.152	.358	y	31	92777.27	97200	1.012	12.15	1....	H1-1b
30	MP2B	PIPE_2.5	.368	5.667	8	.174	5.667		10	30038.461	50715	3.596	3.596	3....	H1-1b
31	MP2C	PIPE_2.5	.361	5.667	12	.166	2.167		3	30038.461	50715	3.596	3.596	3....	H1-1b
32	M83	PL1/2x6	.358	.358	5	.143	.358	y	3	92777.27	97200	1.012	12.15	1....	H1-1b
33	M60	PL1/2x6	.356	0	9	.139	0	y	23	92777.27	97200	1.012	12.15	1....	H1-1b
34	M84	PL1/2x6	.342	0	5	.152	0	y	43	92777.27	97200	1.012	12.15	1....	H1-1b
35	M16	PL1/2x6	.339	.358	1	.140	.358	y	23	92777.27	97200	1.012	12.15	1....	H1-1b
36	M17	PL1/2x6	.324	0	1	.142	0	y	16	92777.27	97200	1.012	12.15	1....	H1-1b
37	M1	HSS4X4X4	.303	6.5	10	.111	6.5	z	4	63969.472	139518	16.181	16.181	2....	H1-1b
38	M69	HSS4X4X4	.270	6.5	8	.099	6.5	z	2	63969.472	139518	16.181	16.181	2....	H1-1b
39	M45	HSS4X4X4	.264	6.5	6	.102	6.5	z	6	63969.472	139518	16.181	16.181	2....	H1-1b
40	M62	L2X2X3	.257	4.401	9	.012	4.401	y	24	8850.644	23392.8	.558	1.216	2....	H2-1
41	M61	L2X2X3	.255	0	9	.012	0	y	18	8850.644	23392.8	.558	1.216	2....	H2-1
42	M85	L2X2X3	.254	0	5	.012	0	y	14	8850.644	23392.8	.558	1.216	2....	H2-1
43	MP5C	PIPE_2.5	.252	5.667	4	.185	2.167		3	30038.461	50715	3.596	3.596	3....	H1-1b
44	M86	L2X2X3	.242	4.401	5	.012	4.401	y	20	8850.644	23392.8	.558	1.217	2....	H2-1
45	MP1B	PIPE_2.5	.240	5.667	10	.174	2.167		11	30038.461	50715	3.596	3.596	3....	H1-1b
46	M18	L2X2X3	.239	0	1	.013	0	y	22	8850.644	23392.8	.558	1.216	2....	H2-1
47	MP5A	PIPE_2.5	.237	5.667	8	.181	2.167		1	30038.461	50715	3.596	3.596	4....	H1-1b
48	M19	L2X2X3	.233	4.401	1	.013	4.401	y	16	8850.644	23392.8	.558	1.217	2....	H2-1
49	MP5B	PIPE_2.5	.232	5.667	12	.178	5.667		4	30038.461	50715	3.596	3.596	3....	H1-1b
50	MP1C	PIPE_2.5	.230	5.667	3	.175	2.167		4	30038.461	50715	3.596	3.596	1....	H1-1b
51	MP1A	PIPE_2.5	.218	5.667	7	.174	2.167		2	30038.461	50715	3.596	3.596	2....	H1-1b
52	M70	HSS4X4X4	.184	2.413	4	.065	.251	z	4	136158.3...	139518	16.181	16.181	1....	H1-1b
53	M46	HSS4X4X4	.181	2.413	8	.065	.251	z	8	136158.3...	139518	16.181	16.181	1....	H1-1b
54	M2	HSS4X4X4	.179	2.413	24	.061	.251	z	12	136158.3...	139518	16.181	16.181	1....	H1-1b
55	R2	PIPE_2.0	.179	2	6	.052	2		2	26521.424	32130	1.872	1.872	1....	H1-1b
56	M3	HSS4X4X4	.177	0	14	.056	2.162	z	2	136158.3...	139518	16.181	16.181	1....	H1-1b
57	M71	HSS4X4X4	.176	0	18	.057	2.162	z	6	136158.3...	139518	16.181	16.181	1....	H1-1b
58	M47	HSS4X4X4	.173	0	22	.060	2.162	z	10	136158.3...	139518	16.181	16.181	1....	H1-1b
59	M58	PL1/2x6	.164	.167	9	.253	0	y	10	96222.477	97200	1.012	12.15	1....	H1-1b
60	M57	PL1/2x6	.163	.167	3	.250	0	y	32	96222.477	97200	1.012	12.15	1....	H1-1b
61	M4	PIPE_3.0	.159	7.25	10	.154	.604		7	21266.02	65205	5.749	5.749	1....	H1-1b
62	M82	PL1/2x6	.158	.167	5	.248	0	y	42	96222.477	97200	1.012	12.15	1....	H1-1b
63	M81	PL1/2x6	.158	.167	5	.261	0	y	4	96222.477	97200	1.012	12.15	1....	H1-1b
64	M113	PIPE_3.0	.156	7.25	3	.161	13.896		11	21266.02	65205	5.749	5.749	1....	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
65	M93	PIPE_3.0	.155	7.25	7	.161	.604		3	21266.02	65205	5.749	5.749	1.5	H1-1b
66	M15	PL1/2x6	.152	.167	1	.240	0	y	3	96222.477	97200	1.012	12.15	1....	H1-1b
67	M14	PL1/2x6	.150	.167	1	.247	0	y	11	96222.477	97200	1.012	12.15	1....	H1-1b
68	R3	PIPE_2.0	.100	2	6	.050	2		9	26521.424	32130	1.872	1.872	1....	H1-1b
69	R4	PIPE_2.0	.100	2	12	.050	2		9	26521.424	32130	1.872	1.872	1....	H1-1b
70	R6	PIPE_2.0	.098	2	5	.050	2		3	26521.424	32130	1.872	1.872	1....	H1-1b
71	R5	PIPE_2.0	.098	2	11	.050	2		3	26521.424	32130	1.872	1.872	1....	H1-1b
72	R1	PIPE_2.0	.098	2	8	.065	2		3	26521.424	32130	1.872	1.872	1....	H1-1b

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pn[lb]	phi*Tn[lb]	phi*Mny...	phi*Mnz...	phi*V...	phi*V...	Cb	Eqn
No Data to Print ...																

Envelope AA ADM1-15: ASD - Building Aluminum Code Checks

Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Pnc/O...	Pnt/Om...	Mny/O...	Mnz/O...	Vny/O...	Vnz/O...	Cb	Eqn
No Data to Print ...																

TES
A CONGRUEX COMPANY

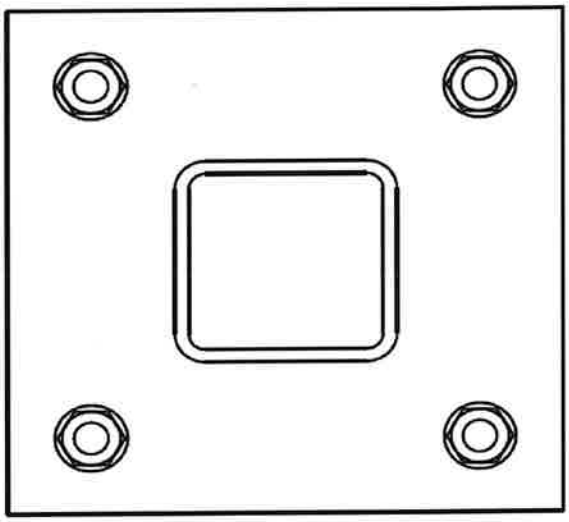
Standoff Arm Flange Connection Check

Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Date: 3/28/2023

NOTE: The calculations shown below are for a single representative load combination for example purposes. The results for all load combinations are presented in the Results Summary Table.

RISA Member Label =	M1	
I or J End?	J	
Load Combination # =	10	
Plate Width, Wp =	8	[In]
Plate Height, Hp =	8	[In]
Plate Thickness, tp =	0.625	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	6	[In]
Bolt Vertical Spacing, Sbv =	6	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	4	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	2	



Typical Connection Detail

NOTES

Capacity Checks:

Max Bolt Shear =	1.031	[Kips]
Bolt Shear Capacity =	13.81	[Kips]
Max Bolt Shear Usage =	7.5%	PASS
Max Bolt Tension =	5.17	[Kips]
Bolt Tension Capacity =	20.34	[Kips]
Max Bolt Tension Usage =	25.4%	PASS
Max Bolt Interaction =	26.3%	PASS
Max Plate Bending Moment =	8.52	[Kip-In]
Length of Yield Line =	5.85	[In]
Plate Moment Capacity =	18.51	[Kip-In]
Max Plate Usage =	46.0%	PASS
Max Weld Usage =	35.2%	PASS

TES
A CONGRUEX COMPANY

Standoff Arm Flange Connection Check

Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Date: 3/28/2023

Results Summary Table

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M1	J	1	0.1634	3.0539	1.2%	15.0%	15.1%	27.2%	19.3%
M1	J	2	0.4576	3.2551	3.3%	16.0%	16.2%	29.0%	14.7%
M1	J	3	0.8443	4.5286	6.1%	22.3%	22.9%	40.3%	15.0%
M1	J	4	1.0613	5.1182	7.7%	25.2%	26.1%	45.5%	20.0%
M1	J	5	0.9106	3.3982	6.6%	16.7%	17.6%	30.2%	15.0%
M1	J	6	0.5412	1.0224	3.9%	5.0%	5.8%	9.1%	8.0%
M1	J	7	0.2380	0.0908	1.7%	0.4%	1.7%	0.8%	13.3%
M1	J	8	0.4699	0.6427	3.4%	3.2%	4.0%	5.7%	16.6%
M1	J	9	0.8337	2.9625	6.0%	14.6%	15.4%	26.4%	26.1%
M1	J	10	1.0310	5.1700	7.5%	25.4%	26.3%	46.0%	35.2%
M1	J	11	0.8604	5.0345	6.2%	24.8%	25.4%	44.8%	33.6%
M1	J	12	0.4722	3.6605	3.4%	18.0%	18.2%	32.6%	23.7%
M1	J	13	0.4392	3.3617	3.2%	16.5%	16.8%	29.9%	22.1%
M1	J	14	0.4752	3.3786	3.4%	16.6%	16.8%	30.1%	21.2%
M1	J	15	0.5197	3.6506	3.8%	17.9%	18.2%	32.5%	18.1%
M1	J	16	0.5467	3.7701	4.0%	18.5%	18.8%	33.6%	15.2%
M1	J	17	0.5293	3.3925	3.8%	16.7%	16.9%	30.2%	15.6%
M1	J	18	0.4896	2.8963	3.5%	14.2%	14.5%	25.8%	17.5%
M1	J	19	0.4541	2.7201	3.3%	13.4%	13.7%	24.2%	18.2%
M1	J	20	0.4339	2.8528	3.1%	14.0%	14.4%	25.4%	19.2%
M1	J	21	0.4672	3.3428	3.4%	16.4%	16.7%	29.7%	22.4%
M1	J	22	0.4852	3.8008	3.5%	18.7%	18.9%	33.8%	25.4%
M1	J	23	0.4636	3.7595	3.4%	18.5%	18.7%	33.5%	24.9%
M1	J	24	0.4243	3.4717	3.1%	17.1%	17.3%	30.9%	22.9%
M1	J	25	0.2037	1.5363	1.5%	7.6%	7.7%	13.7%	10.2%
M1	J	26	0.2140	1.4927	1.6%	7.3%	7.5%	13.3%	9.9%
M1	J	27	0.2259	1.5656	1.6%	7.7%	7.8%	13.9%	9.0%
M1	J	28	0.2334	1.5993	1.7%	7.9%	8.0%	14.2%	8.2%
M1	J	29	0.2287	1.4992	1.7%	7.4%	7.5%	13.3%	8.3%
M1	J	30	0.2184	1.3623	1.6%	6.7%	6.8%	12.1%	8.8%
M1	J	31	0.2078	1.3546	1.5%	6.7%	6.8%	12.1%	9.1%
M1	J	32	0.2002	1.3962	1.5%	6.9%	7.0%	12.4%	9.3%
M1	J	33	0.1945	1.5307	1.4%	7.5%	7.7%	13.6%	10.2%
M1	J	34	0.1918	1.6576	1.4%	8.1%	8.3%	14.8%	11.0%
M1	J	35	0.1931	1.6500	1.4%	8.1%	8.2%	14.7%	10.9%
M1	J	36	0.1967	1.5715	1.4%	7.7%	7.9%	14.0%	10.4%
M1	J	37	0.1830	1.5144	1.3%	7.4%	7.6%	13.5%	9.8%
M1	J	38	0.1923	1.5396	1.4%	7.6%	7.7%	13.7%	9.5%
M1	J	39	0.2030	1.6135	1.5%	7.9%	8.0%	14.4%	8.7%
M1	J	40	0.2100	1.6462	1.5%	8.1%	8.2%	14.6%	7.9%
M1	J	41	0.2057	1.5471	1.5%	7.6%	7.7%	13.8%	8.0%
M1	J	42	0.1965	1.4102	1.4%	6.9%	7.1%	12.6%	8.5%

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Standoff Arm Flange Connection Check			Date
			3/28/2023
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M1	J	43	0.1873	1.3566	1.4%	6.7%	6.8%	12.1%	8.7%
M1	J	44	0.1927	1.3494	1.4%	6.6%	6.8%	12.0%	9.0%
M1	J	45	0.2015	1.4839	1.5%	7.3%	7.4%	13.2%	9.9%
M1	J	46	0.2062	1.6098	1.5%	7.9%	8.0%	14.3%	10.7%
M1	J	47	0.2002	1.6031	1.4%	7.9%	8.0%	14.3%	10.6%
M1	J	48	0.1902	1.5236	1.4%	7.5%	7.6%	13.6%	10.1%
M1	J	49	0.1957	1.4747	1.4%	7.3%	7.4%	13.1%	9.8%
M1	J	50	0.1964	1.4750	1.4%	7.3%	7.4%	13.1%	9.8%
M1	J	51	0.2322	1.7148	1.7%	8.4%	8.6%	15.3%	11.4%
M1	J	52	0.2048	1.6203	1.5%	8.0%	8.1%	14.4%	10.7%
M1	J	53	0.2128	1.6641	1.5%	8.2%	8.3%	14.8%	10.1%
M1	J	54	0.2200	1.6869	1.6%	8.3%	8.4%	15.0%	9.5%
M1	J	55	0.2236	1.6641	1.6%	8.2%	8.3%	14.8%	9.1%
M1	J	56	0.2215	1.6007	1.6%	7.9%	8.0%	14.2%	9.0%
M1	J	57	0.2154	1.5142	1.6%	7.4%	7.6%	13.5%	9.1%
M1	J	58	0.2078	1.4280	1.5%	7.0%	7.2%	12.7%	9.5%
M1	J	59	0.2021	1.5159	1.5%	7.5%	7.6%	13.5%	10.1%
M1	J	60	0.1976	1.6068	1.4%	7.9%	8.0%	14.3%	10.7%
M1	J	61	0.1971	1.6754	1.4%	8.2%	8.4%	14.9%	11.1%
M1	J	62	0.1962	1.7039	1.4%	8.4%	8.5%	15.2%	11.3%
M1	J	63	0.1998	1.6837	1.4%	8.3%	8.4%	15.0%	11.1%
M1	J	64	0.1405	1.1452	1.0%	5.6%	5.7%	10.2%	7.5%
M1	J	65	0.1490	1.1910	1.1%	5.9%	5.9%	10.6%	7.0%
M1	J	66	0.1568	1.2138	1.1%	6.0%	6.0%	10.8%	6.4%
M1	J	67	0.1608	1.1911	1.2%	5.9%	5.9%	10.6%	6.0%
M1	J	68	0.1584	1.1286	1.1%	5.5%	5.6%	10.0%	5.8%
M1	J	69	0.1516	1.0432	1.1%	5.1%	5.2%	9.3%	6.0%
M1	J	70	0.1436	0.9560	1.0%	4.7%	4.8%	8.5%	6.4%
M1	J	71	0.1379	1.0408	1.0%	5.1%	5.2%	9.3%	7.0%
M1	J	72	0.1405	1.1317	1.0%	5.6%	5.6%	10.1%	7.5%
M1	J	73	0.1421	1.2003	1.0%	5.9%	6.0%	10.7%	8.0%
M1	J	74	0.1380	1.2279	1.0%	6.0%	6.1%	10.9%	8.1%
M1	J	75	0.1351	1.2076	1.0%	5.9%	6.0%	10.7%	8.0%
M45	J	1	0.8041	2.9646	5.8%	14.6%	15.4%	26.4%	12.5%
M45	J	2	0.4788	0.8509	3.5%	4.2%	4.9%	7.6%	8.0%
M45	J	3	0.2078	0.0150	1.5%	0.1%	1.5%	0.1%	13.1%
M45	J	4	0.4700	0.4696	3.4%	2.3%	3.4%	4.2%	15.3%
M45	J	5	0.7980	2.5307	5.8%	12.4%	13.4%	22.5%	22.6%
M45	J	6	0.9707	4.5259	7.0%	22.3%	23.1%	40.3%	30.9%
M45	J	7	0.8305	4.5187	6.0%	22.2%	22.8%	40.2%	30.1%
M45	J	8	0.4859	3.4373	3.5%	16.9%	17.1%	30.6%	22.2%
M45	J	9	0.1595	2.9743	1.2%	14.6%	14.6%	26.5%	18.7%

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Standoff Arm Flange Connection Check			Date
			3/28/2023
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M45	J	10	0.3789	3.0194	2.7%	14.8%	15.0%	26.9%	14.7%
M45	J	11	0.7324	4.0067	5.3%	19.7%	20.2%	35.7%	12.6%
M45	J	12	0.9266	4.4704	6.7%	22.0%	22.8%	39.8%	16.8%
M45	J	13	0.3681	3.1347	2.7%	15.4%	15.6%	27.9%	14.2%
M45	J	14	0.3856	2.6777	2.8%	13.2%	13.4%	23.8%	16.0%
M45	J	15	0.4110	2.5181	3.0%	12.4%	12.7%	22.4%	16.6%
M45	J	16	0.4485	2.5978	3.2%	12.8%	13.0%	23.1%	17.5%
M45	J	17	0.4903	3.0466	3.6%	15.0%	15.1%	27.1%	20.4%
M45	J	18	0.5109	3.4690	3.7%	17.1%	17.2%	30.9%	23.2%
M45	J	19	0.4883	3.4459	3.5%	16.9%	17.1%	30.7%	22.9%
M45	J	20	0.4421	3.2016	3.2%	15.7%	15.9%	28.5%	21.1%
M45	J	21	0.4003	3.1149	2.9%	15.3%	15.5%	27.7%	20.5%
M45	J	22	0.3745	3.1509	2.7%	15.5%	15.7%	28.0%	19.6%
M45	J	23	0.3599	3.3784	2.6%	16.6%	16.8%	30.1%	16.7%
M45	J	24	0.3764	3.4776	2.7%	17.1%	17.3%	30.9%	14.0%
M45	J	25	0.2530	1.6648	1.8%	8.2%	8.4%	14.8%	9.2%
M45	J	26	0.2569	1.5431	1.9%	7.6%	7.8%	13.7%	9.6%
M45	J	27	0.2625	1.4943	1.9%	7.3%	7.6%	13.3%	9.8%
M45	J	28	0.2760	1.5193	2.0%	7.5%	7.5%	13.5%	10.1%
M45	J	29	0.2897	1.6383	2.1%	8.1%	8.1%	14.6%	10.8%
M45	J	30	0.2966	1.7539	2.1%	8.6%	8.7%	15.6%	11.6%
M45	J	31	0.2901	1.7540	2.1%	8.6%	8.7%	15.6%	11.5%
M45	J	32	0.2750	1.6911	2.0%	8.3%	8.4%	15.0%	11.1%
M45	J	33	0.2595	1.6641	1.9%	8.2%	8.3%	14.8%	10.9%
M45	J	34	0.2532	1.6690	1.8%	8.2%	8.4%	14.9%	10.6%
M45	J	35	0.2506	1.7256	1.8%	8.5%	8.7%	15.4%	9.9%
M45	J	36	0.2510	1.7516	1.8%	8.6%	8.8%	15.6%	9.1%
M45	J	37	0.1920	1.4797	1.4%	7.3%	7.4%	13.2%	8.2%
M45	J	38	0.1978	1.3581	1.4%	6.7%	6.8%	12.1%	8.7%
M45	J	39	0.2049	1.3302	1.5%	6.5%	6.6%	11.8%	8.9%
M45	J	40	0.2168	1.3672	1.6%	6.7%	6.8%	12.2%	9.1%
M45	J	41	0.2277	1.4861	1.6%	7.3%	7.4%	13.2%	9.9%
M45	J	42	0.2332	1.6008	1.7%	7.9%	7.9%	14.2%	10.7%
M45	J	43	0.2275	1.6009	1.6%	7.9%	7.9%	14.2%	10.6%
M45	J	44	0.2149	1.5380	1.6%	7.6%	7.6%	13.7%	10.2%
M45	J	45	0.2026	1.5110	1.5%	7.4%	7.5%	13.4%	10.0%
M45	J	46	0.1944	1.4840	1.4%	7.3%	7.4%	13.2%	9.7%
M45	J	47	0.1894	1.5406	1.4%	7.6%	7.7%	13.7%	9.0%
M45	J	48	0.1891	1.5666	1.4%	7.7%	7.8%	13.9%	8.2%
M45	J	49	0.1954	1.6167	1.4%	7.9%	8.0%	14.4%	10.7%
M45	J	50	0.2561	1.7388	1.9%	8.5%	8.7%	15.5%	11.6%
M45	J	51	0.2093	1.6243	1.5%	8.0%	8.1%	14.5%	10.7%

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Standoff Arm Flange Connection Check			Date
			3/28/2023
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M45	J	52	0.1779	1.5027	1.3%	7.4%	7.5%	13.4%	8.4%
M45	J	53	0.1825	1.4218	1.3%	7.0%	7.1%	12.7%	8.6%
M45	J	54	0.1881	1.3487	1.4%	6.6%	6.7%	12.0%	9.0%
M45	J	55	0.1963	1.4322	1.4%	7.0%	7.1%	12.7%	9.5%
M45	J	56	0.2031	1.5185	1.5%	7.5%	7.5%	13.5%	10.1%
M45	J	57	0.2049	1.5842	1.5%	7.8%	7.9%	14.1%	10.5%
M45	J	58	0.2007	1.6130	1.5%	7.9%	8.0%	14.4%	10.7%
M45	J	59	0.1925	1.5951	1.4%	7.8%	7.9%	14.2%	10.5%
M45	J	60	0.1830	1.5376	1.3%	7.6%	7.6%	13.7%	10.1%
M45	J	61	0.1777	1.5677	1.3%	7.7%	7.8%	14.0%	9.6%
M45	J	62	0.1752	1.5872	1.3%	7.8%	7.9%	14.1%	9.0%
M45	J	63	0.1751	1.5643	1.3%	7.7%	7.8%	13.9%	8.6%
M45	J	64	0.1205	1.0584	0.9%	5.2%	5.3%	9.4%	5.5%
M45	J	65	0.1249	0.9775	0.9%	4.8%	4.9%	8.7%	5.6%
M45	J	66	0.1304	0.8984	0.9%	4.4%	4.5%	8.0%	6.0%
M45	J	67	0.1390	0.9820	1.0%	4.8%	4.9%	8.7%	6.6%
M45	J	68	0.1457	1.0682	1.1%	5.3%	5.3%	9.5%	7.1%
M45	J	69	0.1478	1.1350	1.1%	5.6%	5.6%	10.1%	7.5%
M45	J	70	0.1434	1.1627	1.0%	5.7%	5.8%	10.3%	7.7%
M45	J	71	0.1346	1.1448	1.0%	5.6%	5.7%	10.2%	7.5%
M45	J	72	0.1253	1.0872	0.9%	5.3%	5.4%	9.7%	7.1%
M45	J	73	0.1201	1.1234	0.9%	5.5%	5.6%	10.0%	6.6%
M45	J	74	0.1177	1.1428	0.9%	5.6%	5.7%	10.2%	6.0%
M45	J	75	0.1189	1.1200	0.9%	5.5%	5.6%	10.0%	5.6%
M69	J	1	0.8009	2.7219	5.8%	13.4%	14.2%	24.2%	23.6%
M69	J	2	0.9475	4.6103	6.9%	22.7%	23.5%	41.0%	31.4%
M69	J	3	0.8094	4.4835	5.9%	22.0%	22.6%	39.9%	29.9%
M69	J	4	0.4867	3.3019	3.5%	16.2%	16.5%	29.4%	21.3%
M69	J	5	0.1637	3.0054	1.2%	14.8%	14.8%	26.7%	17.4%
M69	J	6	0.3967	3.2461	2.9%	16.0%	16.1%	28.9%	13.2%
M69	J	7	0.7339	4.1907	5.3%	20.6%	21.1%	37.3%	13.4%
M69	J	8	0.9013	4.5868	6.5%	22.6%	23.3%	40.8%	17.1%
M69	J	9	0.7828	2.9431	5.7%	14.5%	15.3%	26.2%	12.1%
M69	J	10	0.4783	0.6961	3.5%	3.4%	4.3%	6.2%	9.2%
M69	J	11	0.2145	0.0380	1.6%	0.2%	1.6%	0.3%	14.2%
M69	J	12	0.4892	0.7119	3.5%	3.5%	4.3%	6.3%	16.3%
M69	J	13	0.4771	3.1311	3.5%	15.4%	15.6%	27.9%	21.0%
M69	J	14	0.4936	3.5377	3.6%	17.4%	17.6%	31.5%	23.6%
M69	J	15	0.4732	3.4971	3.4%	17.2%	17.4%	31.1%	23.2%
M69	J	16	0.4314	3.2402	3.1%	15.9%	16.1%	28.8%	21.4%
M69	J	17	0.3906	3.1520	2.8%	15.5%	15.8%	28.1%	20.7%
M69	J	18	0.3633	3.2027	2.6%	15.7%	16.0%	28.5%	19.8%

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Standoff Arm Flange Connection Check			Date
			3/28/2023
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M69	J	19	0.3804	3.4228	2.8%	16.8%	17.0%	30.5%	16.9%
M69	J	20	0.4005	3.5119	2.9%	17.3%	17.5%	31.3%	14.3%
M69	J	21	0.3886	3.1485	2.8%	15.5%	15.7%	28.0%	14.7%
M69	J	22	0.3749	2.6734	2.7%	13.1%	13.4%	23.8%	16.5%
M69	J	23	0.4022	2.5572	2.9%	12.6%	12.8%	22.8%	17.2%
M69	J	24	0.4400	2.6919	3.2%	13.2%	13.4%	24.0%	18.1%
M69	J	25	0.1939	1.4889	1.4%	7.3%	7.4%	13.3%	9.9%
M69	J	26	0.1969	1.5980	1.4%	7.9%	7.9%	14.2%	10.6%
M69	J	27	0.1924	1.5914	1.4%	7.8%	7.9%	14.2%	10.5%
M69	J	28	0.1834	1.5239	1.3%	7.5%	7.6%	13.6%	10.1%
M69	J	29	0.1740	1.5347	1.3%	7.5%	7.6%	13.7%	9.8%
M69	J	30	0.1786	1.5494	1.3%	7.6%	7.7%	13.8%	9.6%
M69	J	31	0.1882	1.6038	1.4%	7.9%	8.0%	14.3%	8.8%
M69	J	32	0.1932	1.6264	1.4%	8.0%	8.1%	14.5%	8.1%
M69	J	33	0.1905	1.5312	1.4%	7.5%	7.6%	13.6%	8.2%
M69	J	34	0.1828	1.4023	1.3%	6.9%	7.0%	12.5%	8.7%
M69	J	35	0.1770	1.3526	1.3%	6.6%	6.8%	12.0%	8.9%
M69	J	36	0.1860	1.3738	1.3%	6.8%	6.9%	12.2%	9.2%
M69	J	37	0.2122	1.6749	1.5%	8.2%	8.4%	14.9%	11.0%
M69	J	38	0.2113	1.7839	1.5%	8.8%	8.9%	15.9%	11.7%
M69	J	39	0.2112	1.7774	1.5%	8.7%	8.9%	15.8%	11.6%
M69	J	40	0.2133	1.7098	1.5%	8.4%	8.5%	15.2%	11.2%
M69	J	41	0.2196	1.6877	1.6%	8.3%	8.4%	15.0%	10.9%
M69	J	42	0.2330	1.7014	1.7%	8.4%	8.4%	15.1%	10.7%
M69	J	43	0.2463	1.7568	1.8%	8.6%	8.7%	15.6%	10.0%
M69	J	44	0.2529	1.7795	1.8%	8.7%	8.8%	15.8%	9.3%
M69	J	45	0.2489	1.6833	1.8%	8.3%	8.3%	15.0%	9.4%
M69	J	46	0.2376	1.5534	1.7%	7.6%	7.7%	13.8%	9.8%
M69	J	47	0.2241	1.5206	1.6%	7.5%	7.7%	13.5%	10.0%
M69	J	48	0.2164	1.5598	1.6%	7.7%	7.8%	13.9%	10.3%
M69	J	49	0.1823	1.4201	1.3%	7.0%	7.1%	12.6%	9.3%
M69	J	50	0.1831	1.4203	1.3%	7.0%	7.1%	12.6%	9.3%
M69	J	51	0.2167	1.6517	1.6%	8.1%	8.3%	14.7%	10.8%
M69	J	52	0.2095	1.5291	1.5%	7.5%	7.6%	13.6%	10.2%
M69	J	53	0.2113	1.5938	1.5%	7.8%	7.9%	14.2%	10.6%
M69	J	54	0.2070	1.6195	1.5%	8.0%	8.0%	14.4%	10.7%
M69	J	55	0.1990	1.5996	1.4%	7.9%	7.9%	14.2%	10.5%
M69	J	56	0.1897	1.5569	1.4%	7.7%	7.8%	13.9%	10.1%
M69	J	57	0.1848	1.6149	1.3%	7.9%	8.0%	14.4%	9.6%
M69	J	58	0.1824	1.6344	1.3%	8.0%	8.1%	14.5%	9.0%
M69	J	59	0.1823	1.6086	1.3%	7.9%	8.0%	14.3%	8.6%
M69	J	60	0.1851	1.5450	1.3%	7.6%	7.7%	13.7%	8.5%

TES
A CONGRUEX COMPANY

Standoff Arm Flange Connection Check			Date
			3/28/2023
Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
Carrier:	T-Mobile	Mount Elev. [ft]:	165
Site Name:	North Salem	Engineer Name:	P.Roka
Site Number:	CT01916-S-SBA	Project #:	139516

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M69	J	61	0.1895	1.4612	1.4%	7.2%	7.3%	13.0%	8.7%
M69	J	62	0.1955	1.3782	1.4%	6.8%	6.9%	12.3%	9.1%
M69	J	63	0.2035	1.4439	1.5%	7.1%	7.2%	12.8%	9.6%
M69	J	64	0.1503	1.0770	1.1%	5.3%	5.4%	9.6%	7.2%
M69	J	65	0.1523	1.1417	1.1%	5.6%	5.7%	10.2%	7.6%
M69	J	66	0.1478	1.1673	1.1%	5.7%	5.8%	10.4%	7.7%
M69	J	67	0.1391	1.1474	1.0%	5.6%	5.7%	10.2%	7.6%
M69	J	68	0.1300	1.0978	0.9%	5.4%	5.5%	9.8%	7.1%
M69	J	69	0.1251	1.1578	0.9%	5.7%	5.8%	10.3%	6.6%
M69	J	70	0.1223	1.1762	0.9%	5.8%	5.8%	10.5%	6.0%
M69	J	71	0.1229	1.1514	0.9%	5.7%	5.7%	10.2%	5.6%
M69	J	72	0.1250	1.0879	0.9%	5.3%	5.4%	9.7%	5.5%
M69	J	73	0.1299	1.0041	0.9%	4.9%	5.0%	8.9%	5.7%
M69	J	74	0.1353	0.9211	1.0%	4.5%	4.6%	8.2%	6.1%
M69	J	75	0.1436	0.9918	1.0%	4.9%	4.9%	8.8%	6.6%

TES **Tower Engineering Solutions**

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – New Mount Passing MA

Purpose – to provide TES the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- Any special photos outside of the standard requirements will be indicated on the passing MA
- Verification that loading is as communicated in the Mount Analysis. NOTE If loading is different than what is conveyed in the modification drawing contact TES immediately.
- Verification that the New Mount Installed is as specified in the MA
- Each photo should be time and date stamped
- Photos should be high resolution and submitted in a Zip File and should be organized in the file structure as depicted in Schedule A attached.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope.
- The photos in the file structure should be uploaded to **vzwpmi@testower.us** as depicted on the drawings

Photo Requirements:

- *Base and "During Installation Photos"*
  - Base pictures include
    - Photo of Gate Signs showing the tower owner, site name, and number
    - Photo of carrier shelter showing the carrier site name and number if available
    - Photos of the galvanizing compound and/or paint used (if applicable), clearly showing the label and name
  - "During Installation Photos if provided - must be placed only in this folder
- *Photos taken at ground level*
  - Overall tower structure before and after installation of the modifications
  - Photos of the appropriate mount before and after installation of the new mount;
- *Photos taken at Mount Elevation*
  - Photos showing each individual sector before and also after installation of equipment.
    - These photos should also certify that the placement and geometry of the equipment on the mount is as depicted on the sketch and table in the mount analysis
  - Photos showing the newly installed mount that is as specified in the Mount Analysis
  - Photos showing the safety climb wire rope above and below the mount prior to modification.
  - Photos showing the climbing facility and safety climb if present.
  - Photos showing the climbing facility and safety climb if present.

Antenna & equipment placement and Geometry Confirmation:

- The contractor must certify that the antenna & equipment placement and geometry is in accordance with the antenna placement diagrams as included in this mount analysis.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the antenna placement diagrams as included in this mount analysis.

☐ The contractor notes that the equipment on the mount is not in accordance with the antenna placement diagrams and has accordingly marked up the diagrams or provided a diagram outlining the differences.

Certifying Individual: Company _____

Name _____

Signature _____

New Mount Certification:

- The contractor must certify that the New Mount installed is as specified

☐ The contractor certifies that the New Mount installed is as specified in the Passing Mount Analysis

☐ The contractor notes that the New Mount installed is not as specified and engineering approval was received for the New Mount Installed

☐ The contractor did not install the New Mount specified in the Passing Mount Analysis

Certifying Individual: Company _____

Name _____

Signature _____

Special Instructions / Validation as required from the MA or any other issues Identified during installation:

Issue: None

Response:

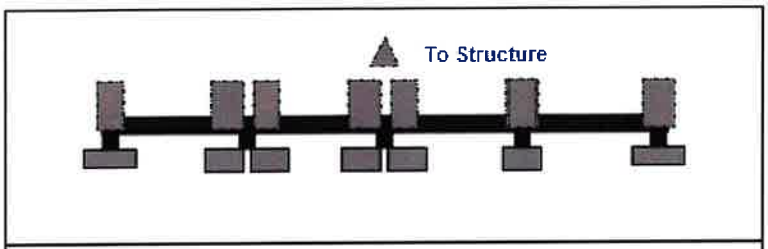
1320 Greenway Drive - Suite 600, Irving, Texas 75038 Phone: (972) 483-0607, Fax: (972) 975-9615

Schedule A – Photo & Document File Structure

- VzW Site Number / Name
  - Base & "During Installation" Photos
  - Pre-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
  - Post-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
    - Photos of climbing facility and safety climb – If Present
  - Certifications – Submission of this document including certifications
  - Specific Required Additional Photos

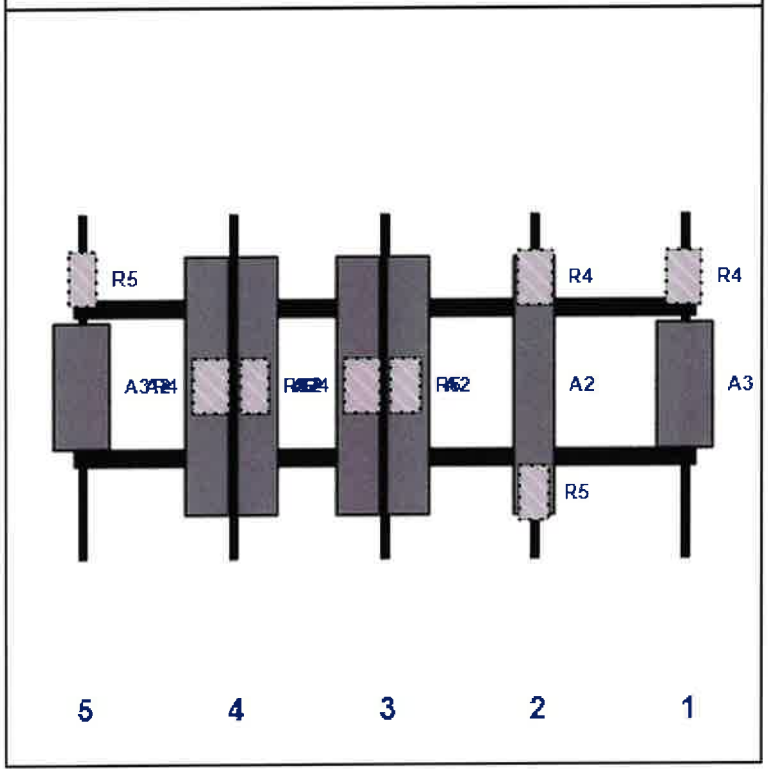
1320 Greenway Drive - Suite 600, Irving, Texas 75038 Phone: (972) 483-0607, Fax: (972) 975-9615

Plan View



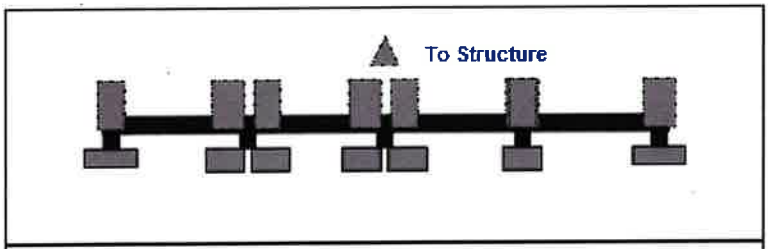
Front View

Looking Toward Structure



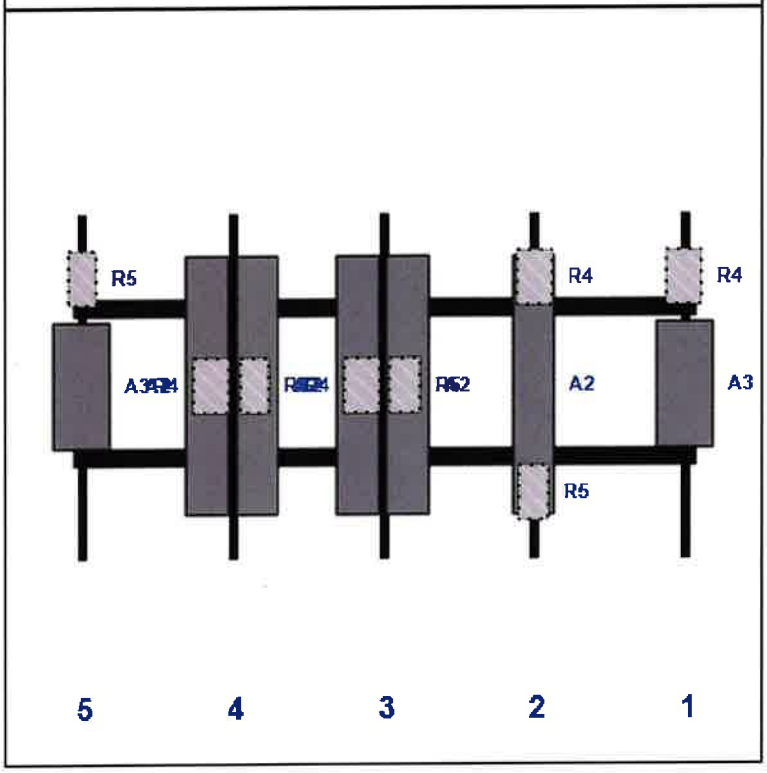
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A3	MT6407-77A	35.10	16.10	171.00	1	a	Front	47.94			
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	171.00	1	a	Behind	18.00			
A2	NHH-65B-R2B	72.00	11.90	129.00	2	a	Front	48.00			
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	129.00	2	a	Behind	18.00			
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	129.00	2	a	Behind	78.00			
A2	NHH-65B-R2B	72.00	11.90	87.00	3	a	Front	48.00	-7.00		
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	87.00	3	a	Behind	48.00	-6.00		
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	87.00	3	a	Behind	48.00	6.00		
A2	NHH-65B-R2B	72.00	11.90	87.00	3	b	Front	48.00	7.00		
A2	NHH-65B-R2B	72.00	11.90	45.00	4	a	Front	48.00	-7.00		
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	45.00	4	a	Behind	48.00	-6.00		
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	45.00	4	a	Behind	48.00	6.00		
A2	NHH-65B-R2B	72.00	11.90	45.00	4	b	Front	48.00	7.00		
A3	MT6407-77A	35.10	16.10	3.00	5	a	Front	47.94			
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	3.00	5	a	Behind	18.00			
R1	RVZDC-6627-PF-48*	29.50	16.50		Member						
R2	RVZDC-6627-PF-48*	29.50	16.50		Member						
R3	RVZDC-6627-PF-48*	29.50	16.50		Member						
R4	RVZDC-6627-PF-48*	29.50	16.50		Member						
R5	RVZDC-6627-PF-48*	29.50	16.50		Member						
R6	RVZDC-6627-PF-48*	29.50	16.50		Member						
R1	RVZDC-6627-PF-48*	29.50	16.50		Member						

Plan View



Front View

Looking Toward Structure



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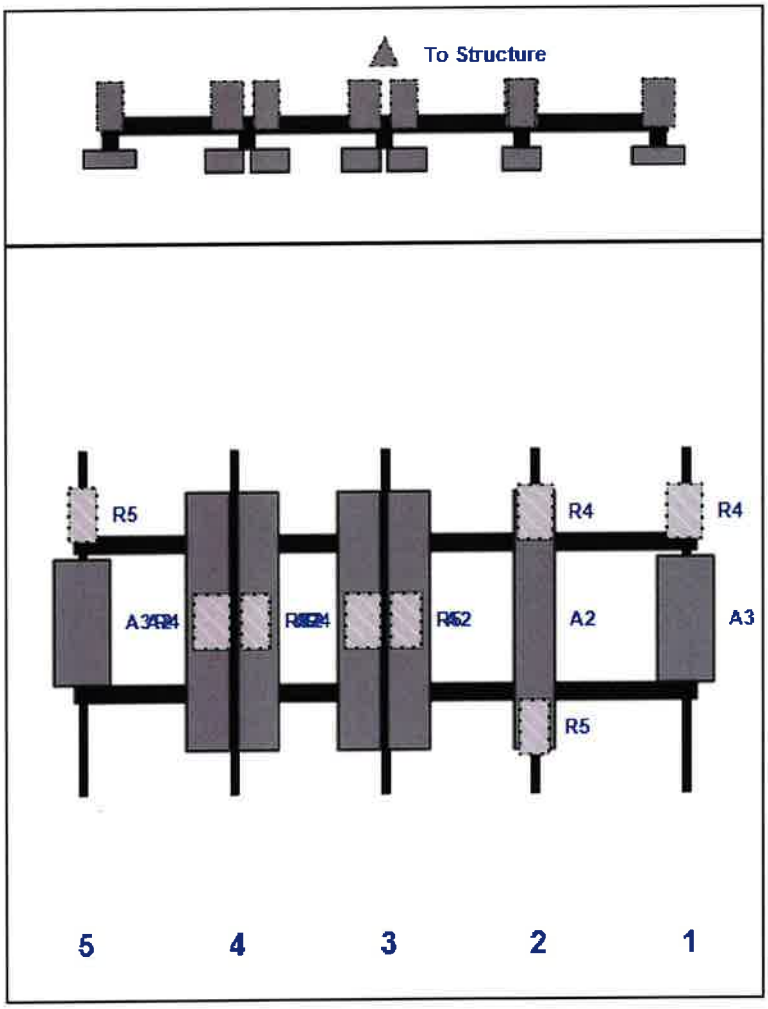
A2	NHH-65B-R2B	72.00	11.90	87.00	3	a	Front	48.00	-7.00		
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	87.00	3	a	Behind	48.00	-6.00		
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	87.00	3	a	Behind	48.00	6.00		
A2	NHH-65B-R2B	72.00	11.90	87.00	3	b	Front	48.00	7.00		
A2	NHH-65B-R2B	72.00	11.90	45.00	4	a	Front	48.00	-7.00		
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	45.00	4	a	Behind	48.00	-6.00		
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	45.00	4	a	Behind	48.00	6.00		
A2	NHH-65B-R2B	72.00	11.90	45.00	4	b	Front	48.00	7.00		
A3	MT6407-77A	35.10	16.10	3.00	5	a	Front	47.94			
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	3.00	5	a	Behind	18.00			

Plan View



Front View

Looking Toward Structure

Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A3	MT6407-77A	35.10	16.10	171.00	1	a	Front	47.94			
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R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	129.00	2	a	Behind	78.00			
A2	NHH-65B-R2B	72.00	11.90	87.00	3	a	Front	48.00	-7.00		
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	87.00	3	a	Behind	48.00	-6.00		
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	87.00	3	a	Behind	48.00	6.00		
A2	NHH-65B-R2B	72.00	11.90	87.00	3	b	Front	48.00	7.00		
A2	NHH-65B-R2B	72.00	11.90	45.00	4	a	Front	48.00	-7.00		
R4	B2/B66A RRH ORAN (RF4439d-25A)	15.00	10.00	45.00	4	a	Behind	48.00	-6.00		
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	45.00	4	a	Behind	48.00	6.00		
A2	NHH-65B-R2B	72.00	11.90	45.00	4	b	Front	48.00	7.00		
A3	MT6407-77A	35.10	16.10	3.00	5	a	Front	47.94			
R5	B5/B13 RRH ORAN (RF4440d-13A)	15.00	8.10	3.00	5	a	Behind	18.00			

ATTACHMENT 6

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

Salem North

160 Witch Meadow Road, Salem, CT 06420

April 25, 2023

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of Verizon's antenna arrays to be mounted at 165' AGL on an existing monopole tower located at 160 Witch Meadow Road in Salem, CT. The coordinates of the monopole tower are 41° 30' 10.18" N, 72° 17' 49.57" W.

Verizon is proposing the following:

1) Install nine (9) multi-band antennas (three (3) per sector) to support its commercial LTE network.

This report considers the planned antenna configuration for Verizon[1] and the existing antennas for AT&T, Sprint, and T-Mobile to derive the resulting % MPE of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to Verizon's Radio Frequency Design Sheet updated 11/22/2022.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{PowerDensity} = \left(\frac{EIRP}{\pi \times R^2}\right) \times \text{Off BeamLoss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Antenna Inventory

Table 1 below outlines Verizon's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 50°	700	160	14.9	4944	NHH-65B-R2B	65	0	5.99	165
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3700	200	25.5	70962	MT6407-77A	-	0	2.92	165
	Beta / 130°	700	160	14.9	4944	NHH-65B-R2B	65	0	5.99	165
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3700	200	25.5	70962	MT6407-77A	-	0	2.92	165
	Gamma / 300°	700	160	14.9	4944	NHH-65B-R2B	65	0	5.99	165
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3700	200	25.5	70962	MT6407-77A	-	0	2.92	165

Table 1: Proposed Antenna Inventory[2] [3]

[2] Antenna heights are in reference to Verizon's Radio Frequency Design Sheet updated 11/22/2022.

[3] Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

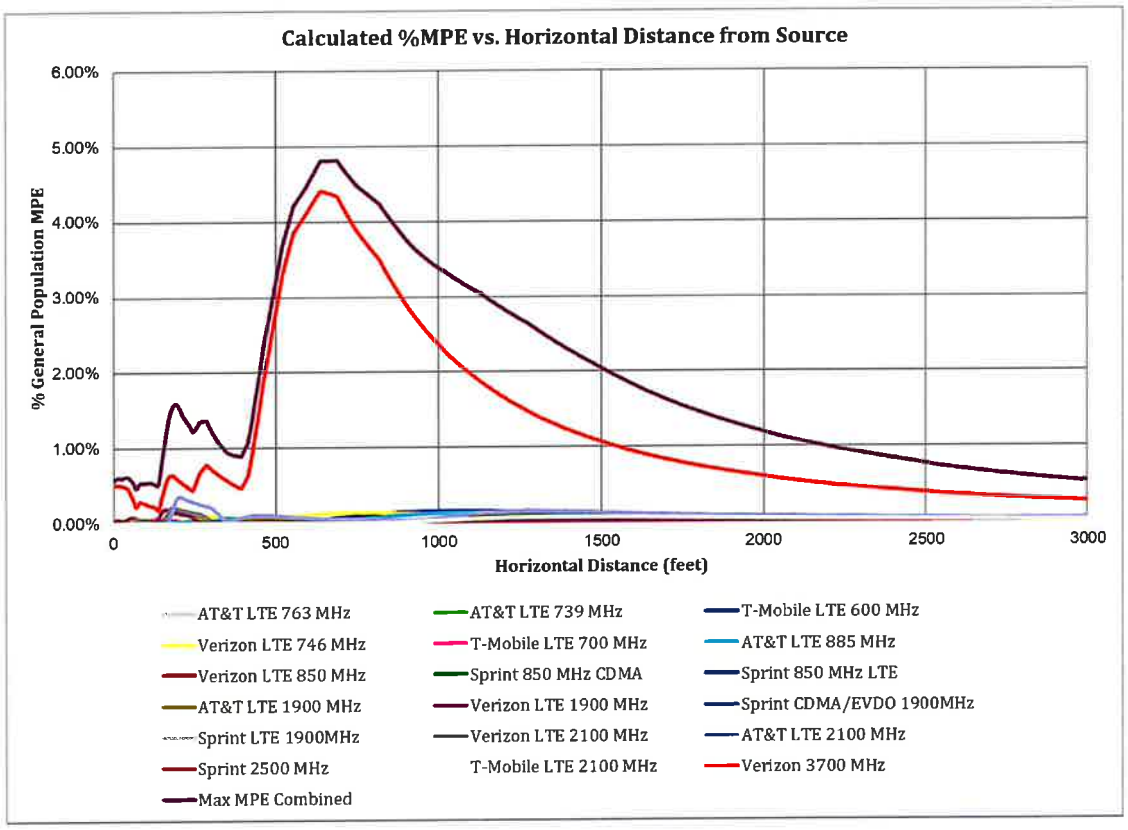


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (4.81% of the General Population limit) is calculated to occur at a horizontal distance of 688 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 688 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
AT&T LTE 1900 MHz	1	160.0	185.0	688	0.000420	1.000	0.04%
AT&T LTE 2100 MHz	1	240.0	185.0	688	0.000549	1.000	0.05%
AT&T LTE 739 MHz	1	160.0	185.0	688	0.000215	0.493	0.04%
AT&T LTE 763 MHz	1	160.0	185.0	688	0.000215	0.509	0.04%
AT&T LTE 885 MHz	1	160.0	185.0	688	0.000148	0.590	0.03%
Sprint 2500 MHz	8	25.0	195.0	688	0.000005	1.000	0.00%
Sprint 850 MHz CDMA	1	20.0	195.0	688	0.000029	0.590	0.00%
Sprint 850 MHz LTE	2	50.0	195.0	688	0.000011	0.567	0.00%
Sprint CDMA/EVDO 1900MHz	5	16.0	195.0	688	0.000000	1.000	0.00%
Sprint LTE 1900MHz	2	40.0	195.0	688	0.000001	1.000	0.00%
T-Mobile LTE 2100 MHz	1	120.0	175.0	688	0.000019	1.000	0.00%
T-Mobile LTE 600 MHz	1	160.0	175.0	688	0.000280	0.400	0.07%
T-Mobile LTE 700 MHz	1	160.0	175.0	688	0.000104	0.467	0.02%
Verizon 3700 MHz	1	200.0	165.0	688	0.043387	1.000	4.34%
Verizon LTE 1900 MHz	1	160.0	165.0	688	0.000074	1.000	0.01%
Verizon LTE 2100 MHz	1	240.0	165.0	688	0.000120	1.000	0.01%
Verizon LTE 746 MHz	1	160.0	165.0	688	0.000682	0.497	0.14%
Verizon LTE 850 MHz	1	160.0	165.0	688	0.000046	0.567	0.01%
						Total	**4.81%**

Table 2: Maximum Percent of General Population Exposure Values[4][5][6]

[4] Antenna information for AT&T was taken from Connecticut Siting Council Notice of Exempt Modification – 160 Witch Meadow Road, Salem, Connecticut, dated 5/01/2020

[5] Antenna information for Sprint was taken from Connecticut Siting Council Notice of Exempt Modification – 160 Witch Meadow Road, Salem, Connecticut, dated 5/26/2018

[6] Antenna information for T-Mobile was taken from EBI Consulting, Radio Frequency Emissions Analysis Report, dated 5/24/2022

6. Conclusion

The above analysis verifies that RF exposure levels from the site with Verizon's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **4.81% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 688 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Report Prepared By: Ram Acharya
RF Engineer 1
C Squared Systems, LLC

April 25, 2023
Date

Reviewed/Approved By: Martin J. Lavin
Senior RF Engineer
C Squared Systems, LLC

April 25, 2023
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[7]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[8]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

[7] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[8] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

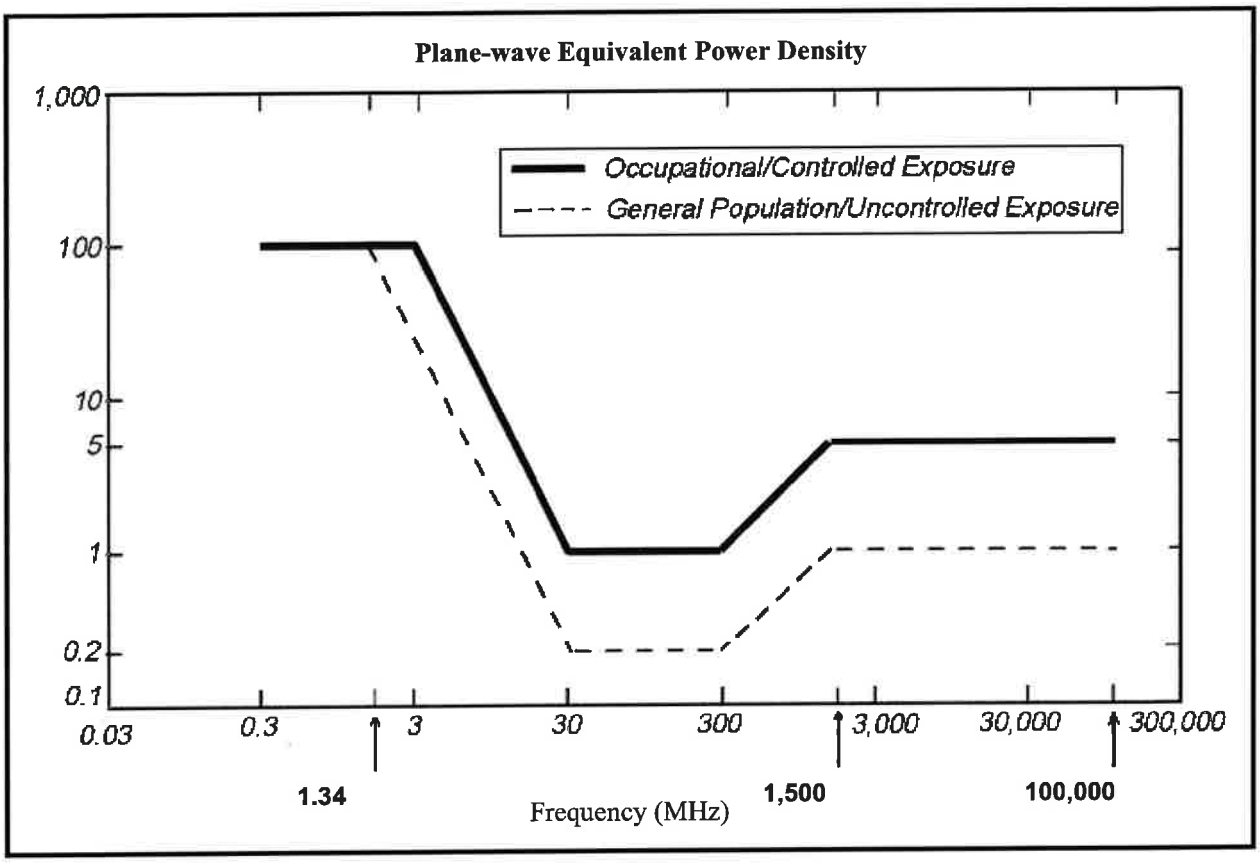
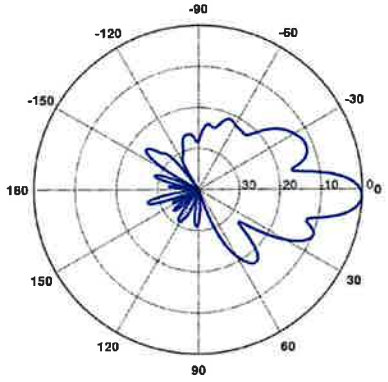


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Verizon Antenna Model Data Sheets and Electrical Patterns

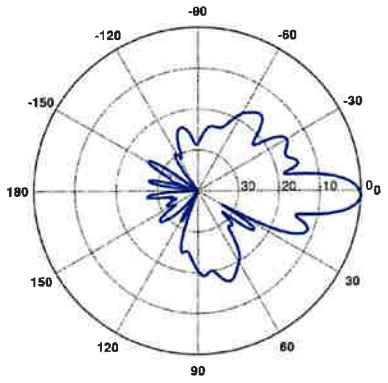
750 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-65B-R2B
Frequency Band:	698-806 MHz
Gain:	14.9 dBi
Vertical Beamwidth:	12.4°
Horizontal Beamwidth:	65°
Polarization:	±45°
Dimensions (L x W x D):	71.9" x 11.85" x 7.08"



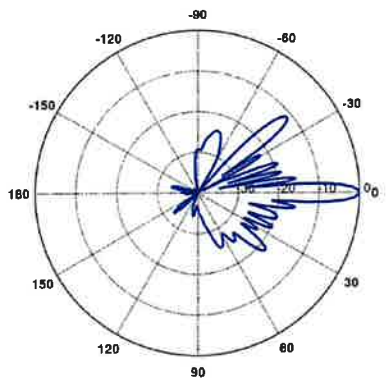
885 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-65B-R2B
Frequency Band:	806-896 MHz
Gain:	15.0 dBi
Vertical Beamwidth:	11.2°
Horizontal Beamwidth:	60°
Polarization:	±45°
Dimensions (L x W x D):	71.9" x 11.85" x 7.08"



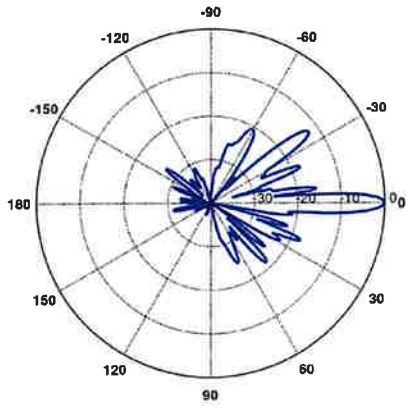
1900 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-65B-R2B
Frequency Band:	1850-1990 MHz
Gain:	17.9 dBi
Vertical Beamwidth:	5.2°
Horizontal Beamwidth:	69°
Polarization:	±45°
Dimensions (L x W x D):	71.9" x 11.85" x 7.08"



2100 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-65B-R2B
Frequency Band:	1920-2200 MHz
Gain:	18.4 dBi
Vertical Beamwidth:	4.9°
Horizontal Beamwidth:	64°
Polarization:	±45°
Dimensions (L x W x D):	71.9" x 11.85" x 7.08"



ATTACHMENT 7

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Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	4	4	neopost 04/26/2023 US POSTAGE $003.55 ZIP 06103 041L12203937
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
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2.	Nicole Haggerty, Planner Town of Salem 270 Hartford Road Salem, CT 06420				
3.	Ronald R. Renz 44 Mustang Drive Monroe, CT 06468				
4.	SBA Properties LLC 8051 Congress Avenue Boca Raton, FL 33487				
5.					
6.					

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